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SPOTLIGHT ON ITALY-1

Italy is a land of small businesses so it is not surprising that the country's top two computer companies are primarily in small business systems. In this two-page spotlight on Italy ANTHEA BALLAM looks first at Olivetti's automated office philosophy and then considers the fortunes of Italy's second computer firm, Mael.

And in the beginning was Olivetti's word

THE automated office of the future is a distant dream despite the remarkable technological advances made over the past decade. Advances continue to be made in the fields of small business systems, word processing, type writer and calculator technology, but such developments are isolated. Only when these technologies integrate will the truly automated office become a practical reality.

Two organisations are perfectly positioned to move into the integrated automated office market: IBM and Olivetti. These two most conspicuously supply all the multitalented equipment

necessary for standard office routines.

Olivetti is deeply concerned with the philosophy behind the automated office, as Ettore Morezzi, chief of the office products group, explained.

He considers, quite reasonably, that the automated office begins with the word, and the word is the typewriter. It may be no coincidence that this year, the most financially healthy for the company for many years, it has staged its most aggressive marketing tour de force yet, launching its two new generation electronic typewriters the ET 221 and ET 201.

Morezzi considers that these

machines will spearhead a change in the office scenario that will begin with something as apparently insignificant as the typewriter. He agreed that in the future the automated office would involve the centralisation of a number of office procedures, and although he would not elaborate in detail, implied that there will be peripherals to come, and further capabilities envisaged for the ET 221 and 201.

Franco Agostinucci, chief of Olivetti's distributed processing, explained the philosophy behind future systems development. "The possibilities lie in the framework of the machine and we will

The Olivetti ET 221 electronic typewriter which provides a 20-character guide and entry display which visually indicates the last 15 characters typed on to the keyboard and allows for immediate correction of the text prior to printing.

discover what will be necessary at the request of the market.

"If there is a demand for an accounting module we will provide that facility, as in the case of those that may demand systematic invoice production."

He was enthusiastic to explain that the capabilities of such devices were considerable, but must be dictated by market demand. "It is technologically already feasible that such a machine can be plugged into a minicomputer system, but plans for building such systems with so heavy a degree of integration must be seen as something for the future. We have the technology."

Meanwhile the ET 221 and ET 201 remain good, efficient stand-alone electronic typewriters with a 1K memory and a number of useful facilities that make the typist's life a good deal easier and more fun. The 221, for example, provides a 20 character guide and entry display which visually exhibits the last 15 characters typed on to the keyboard and allows for immediate correction of the text prior to printing. Both units incorporate a daisy-wheel printing device and both permit basic information to be recalled from memory for regularly used phrases, letter terminations and dates.

Instructions are also provided for automatic positioning of paper and automatic indications are given for a page end. The electronic buffered keyboard provides a somewhat futuristic capability for internationally minded secretaries in that all the variations for national accents and symbols can be recalled at will.

International keyboards apart, Olivetti was quite bold in stating repeatedly at its US Press launch of these products that they were "designed exclusively for the American market". Possibly the company sought recognition of the products in the US as a key to their European acceptance, or maybe they simply wished that the factories producing the machines both in Harrisburg (Pennsylvania) and Ivrea would be kept fully occupied. Whatever the intention the ET 221 and 201 machines have proved successful.

Moving up the word processing ladder one step beyond the electronic typewriters, one encounters two somewhat more heavy duty systems, the TES 401 and the TES 501.

The Olivetti 501 has earned the distinction of being used both at the EEC headquarters in Brussels and also at the European Court of Justice in Luxembourg. It incorporates a number of familiar features in word processing units and appears to be a straightforward and easy to use system.

The TES 401 text editing system was launched at Hanover, and in its basic form is described as an electronic memory with a minidisc file memory. The sleek unit incorporates a RAM memory, with a capacity of 7,500 characters, while the minidisc file memory also holds 7,500 characters storage, which amounts to some four pages of text.

Plans are well underway to incorporate a communication facility into the unit. Exhibited at the Telecom 79 exhibition in Geneva, the communications capability would allow users with special terminals used in conjunction with the 401, to transmit and receive information by the standard Post Office telephone line, telegraph or telex network.

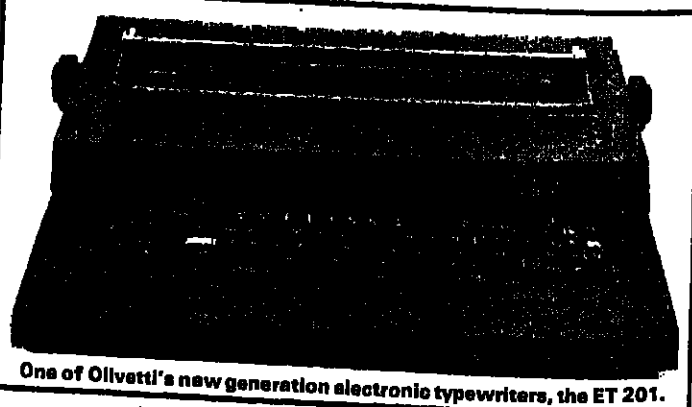
Morezzi was enthusiastic about the prospect of providing Olivetti's WP systems with electronic mail and communications

and the banking and DP experts of Sparekassen.

Commenting on this, the general manager of the Danish bank stated that, "Considering Olivetti's broad engagement in the whole field of office automation and word processing, we attach a great importance to this co-operation".

The Danish Savings Bank's chief was clearly not understating when he observed the diversity of Olivetti's involvement in automated office products. Within the typewriter and word processing range alone, electronic models span from the Lexicon 90 series of machines (now upgraded to the 93, 93C and 94C dual and four pitch models) to the TES 401 and the new generation electronic machines. The automated products also include the sleek series of calculators, designated Logos.

Olivetti is also involved in the



One of Olivetti's new generation electronic typewriters, the ET 201.

capabilities. "Today office automation isn't looking for integrated systems performance so much as an increase in the communications capability of the typewriter... we are also looking at telex services which are an important development."

He added, "I visualise the automated office of the future evolving from several different points, within the office, and this evolution is not likely to come from customised design."

How did Olivetti respond to the challenge of providing equipment to meet a customer requirement? Here Agostinucci took up the story, citing the important order that Denmark's Sparekassen (Savings Bank) had recently placed with the company. In this case the Italian company will be designing bank terminals specifically to meet customer requirements.

Another reason for the company's success in gaining what appears to be one of the largest DP requirements yet to emerge from Denmark was the promise of close co-operation between the technical experts at Ivrea (the company's headquarters and main manufacturing centre)

Mael doomed to stay in second place

UNTIL three years ago Mael, Italy's second computer company, seemed to be the only other runner in the two-horse national hardware race. Today, however, Italy's market has become measurably more competitive with six participants trailing after the unmatched front runner, Olivetti.

Even so, of all Italy's home-bred manufacturers — Italdata, Tesak, Elit-Micromegas, Salco and Omega Data — only Elit-Micromegas of Pisa looks sufficiently pioneering to represent a threat to Mael's No 2 position in the immediate future.

Mael's progress seems almost plodding and careful when viewed against the volatile commercial and political climate of Italy. The company was founded in 1970, under the title of Inset Industriale Sistemi Elettronici SpA and retained the name, officially, until last May. It was then that the organisation's directorate saw fit to change the company's name to make it correspond with that of its altogether better known product line, Mael.

At the start Inset was a quite different beast from the modern Mael. Initially it had been involved exclusively with the production of tailor-made computer systems for specialised industrial and technical applications. Later it moved into commercial systems. In 1970 as now, its manufacturing plant and headquarters were based at Carsoli in Abruzzi, east of Rome.

During the ensuing years, however, Mael changed its identity, and became thoroughly entrenched in the small business systems market — so much so that it has remained stoutly dedicated to this market sector ever since.

Neither markets its products to the end user, nor does it aspire to produce products in any market area other than the business system field. According to the company's vice-general manager, Dario Angelini, it has no plans to stray from this chosen path.

Thus Mael builds small and medium sized business systems (mostly operating in stand-alone mode), incorporates a good workable operating system, and hands the goods over to its dealer/distributors throughout Europe to handle the other software, bells and trimmings. Yet this restricted commercial policy has proved a highly successful formula for the company, and it has grown from strength to strength.

On its home ground, however, Mael does not appear to be as strong as might be expected. Tenders from companies or government departments that might favour an indigenous supplier tend to go in favour of Olivetti.

Nevertheless some pioneering work has emerged from its home, independent dealer/distributor Saga (Sistemi Avanzati Gestione Aziendale).

Saga has offices throughout Italy and the surrounding islands, and operates under four different divisions. Mael readily admits that the most important software development being carried out on its products at the moment comes from the Saga division. Its other overseas dealer/agencies have, nevertheless, proved to be an enterprising band, and have made some effective inroads into certain market areas in Europe.

The company's German agency is an exceptional organisation in that, unlike the others, it functions as a direct associate

of Mael's, and claims the highest sales and installation quota in Europe, even higher than that scored in Italy. Designated Mael Computer GmbH, the German agency boasts over 1,500 installations, and apart from a strong user base in general office system applications, has made a particularly powerful impact on the construction industry.

Another effective European agency for the company has been the UK dealer Computer Ancillaries of Egham. This company has chalked up an impressive user-base of about 600 installations, and through its countrywide dealer network has secured orders with a number of major corporations. The company's chairman, Ian Skinner is particularly enthusiastic about the Italian organisation's latest product, the Mael 5300, which was launched at Hanover this year and made its first UK appearance at the International Business Show.

"The Mael 5300", he explained, "is probably the most saleable product in the Mael line because it effectively brings the 5000 series down to a level comparable with the high end of the microcomputer market. This new model features in its basic form, a screen, 64K central processing unit, 2.7 megabyte of floppy disc storage and a 120 characters per second printer. Over here we will be selling it for £9,800."

For Dario Angelini the 5300 represents an important product. It slots neatly into the already established 5000 range of systems designed for multi-programming and real time processing jobs involving the handling of sizeable data files. The mono-multiterminal 5300 extends the capabilities of the range, which have already proved satisfactory for such applications as sales ledger systems, stock control and nominal ledger.

Mael is as careful in its design of systems as in its operational philosophy. Like the other units in the 5000 series the new 5300 uses a 16-bit parallel micro-processor, the reliable and well-established General Automation SPC 220, and this provides a 500 nanosecond cycle time. One of the most intriguing features of the new baby is the inclusion of the mega-floppy disc unit, which offers 2.7 megabytes of storage with a maximum online capacity of 5.4 megabytes.

Apart from providing a powerful storage capability, Mael claims that its 5300 system was one of the first in Europe to incorporate this powerful storage facility in a small business system.

The company has been able to include this sort of up-to-the-moment design detail by running a small office in the US with the sole purpose of monitoring the latest developments on the data processing front.

There are, to date, some 5,000 Mael systems operating in 16 different countries. Some of the systems can be found in quite unexpected situations, tucked well behind the Iron Curtain and also in some of the more distant regions of the Middle East. The robust design has helped them to prove quite functional in diverse climates.

National preferences for machine types has varied considerably from country to country. In the UK, for example, the system at the bottom end of the Mael range has hardly featured at all, whereas in Italy and Germany this diminutive device has proved much more successful, and was favoured in technical as



The Mael 5300, which was launched at Hanover last year. It is described as "probably the most saleable product in the Mael line because it effectively brings the 5000 series down to a level comparable with the high end of the microcomputer market."

well as commercial environments. This unit is called the Mael 1000.

The 1000 is ostensibly a stand-alone table top data preparation unit, which is easily programmed and can provide data on an IBM compatible floppy disc. It can deal with relatively simple calculation, statistical or table look-up tasks, and may also be linked to a number of peripheral devices, such as a matrix printer or magnetic tape transport.

The Mael 2000, by contrast,

has proved as popular in the UK as it has in Italy and Germany. Computer Ancillaries featured the 2100 system conspicuously on its stand at the IBS. This self-contained small system is available with a range of software packages, and in this country may be acquired complete with printer, 32K CPU, screen and a megabyte of floppy disc storage at a cost of £8,450.

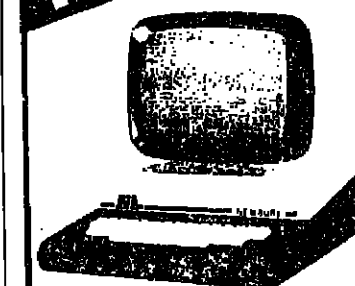
Thus Italy's second computer company can be seen to be offering an effective and low-cost solution to the business

market. Yet by limiting itself in its products and marketing strategy it has clearly chosen a safe and wise path, so far. In 1977 it doubled its turnover on the previous year, and in the first six months of this year doubled the sales figures recorded for the whole of 1978.

But even if the company can stage this exceptional growth rate, it is still doomed to remain a four-stone weakling behind the might and power of Italy's volatile and inspired first computer company.

SPOTLIGHT ON ITALY-2

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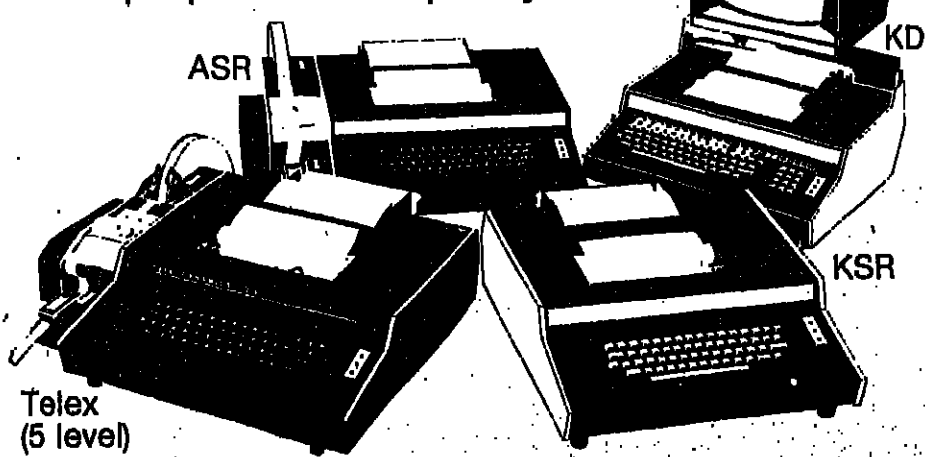
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One of the largest private data processing operations in the world is run as co-operative venture by New Zealand's banking industry. It is the only system that serves a country's entire banking

New Zealand leads in banking systems

NO ONE can move in New Zealand data processing circles for more than a few days without hearing what a world-beating banking system the country has. The Databank bureau is constantly being cited as evidence that this little country is not a backwater of the computer world. It can even, occasionally, take a lead in the application of

computer technology.

The smallness of the country is, indeed, the chief reason why it has managed to evolve a system fairly described as unique — the world's only countrywide services operation catering for the DP needs of all its banks.

There are banking consortium arrangements for computer services elsewhere in the world, of

course, notably Scandinavia, Japan and the US, but these involve only some of the country's banks.

New Zealand has only five trading banks, three shared with Australia. As these cater for a population of only three million, it clearly makes a good deal of sense for banks to combine service operations, rather than each running a separate computer system catering for a small number of account holders.

The Bank of New Zealand began looking at computer use in 1960, to supplement and relieve the pressure on the courier service, kept busy running documents to and from bank branches all over the country.

At about the same time, another of the five, the National Bank (part of the British Lloyds group) was also examining computer solutions. The two compared notes and decided on a joint approach. In the following year the three others — the Commercial Bank of Australia, the Australia and New Zealand Bank, and the Bank of New South Wales — accepted an invitation to join the consortium.

Had any of the banks earlier installed equipment on its own, said Databank spokesman Malcolm Shaw, the venture incorporated in 1967 as Databank would probably never have got off the ground. As well as its smallness, New Zealand can probably thank the scarcity of computer expertise in the country at the time. If more experts had been available, the banks might have gone their separate ways.

In the event, the next three years saw a gradual take-on of the Databank venture by all five banks; the Bank of New Zealand first, by mid-1967, followed later that year by the National Bank and the following year by the three Australian banks. By November 1969, all branches were using the Databank bank service, based on six IBM 360/40s, one in each of the country's biggest population centres.

Cheques and other documents would be collected by couriers from each branch and run to the nearest computer centre for processing.

The basic services of cheque clearing and processing of the banks' internal accounts were the first applications handled.

The data for cheque clearing is captured from magnetic ink encoding on the cheque forms. The practice which above all made the system workable was the adoption of a uniform customer number by all five banks. This is still claimed as a unique feature. It identifies each customer regardless of the number of accounts operated. The individual account is indicated by a suffix.

The cheque form also carries a serial number, a code number for each of the five banks, a code for the branch and a code indicating the transaction type. After the cheque is written out,

by Stephen Bell

branch staff add to the line another magnetic ink figure showing the amount of money involved.

The expansion of Databank's workload led in due course to the installation of 360s in other parts of the country, while the busiest installations, in Wellington, the capital, and Auckland, the largest population centre, were upgraded to 370/145s.

These upgrades served for a time, but the growing volume of business and the take-on of new applications soon had the consortium looking at the possibility of an online network. It was a logical development to centre the network on the bigger Auckland and Wellington

machines, using the 360/40s as subsidiary nodes.

Under the new system, cheques and deposit records collected from each branch by courier are taken each evening to the nearest of the small centres, known as Network Centres. The machines here still do the basic accounting, but for updating of the master files, the data is sent down the line to either the Auckland or Wellington node where these files are kept. These two nodes, known as Central Processing Centres, no longer see a courier. They receive all data online from the Network Centres and perform the updates on each customer's account. Output data is then returned to the appropriate centre for printing.

The data transfer rates involved in this exercise are impressive by anyone's standards. A typical Network Centre, such as the one in Christchurch, would send million bytes of information to the Wellington Central Processing Centre each weeknight, between 8pm and midnight.

About 27 million bytes are sent back down to the Network Centre where the printer disgorges about 900,000 lines of data each night, between 2am and 8am, ready for distribution to the branches next morning.

The CPCs, of course, are also exchanging data with each other. From the point of view of the Wellington centre, this means a total of about 28 million bytes of input and 130 million bytes of output per night.

In addition to supporting a high data rate, the network set-up was required to be flexible to cope with the terminals of various types which were being requested for installation at the bank branches themselves. A variety of protocols had therefore to be supported.

IBM produced no suitable equipment at the time, said Shaw, and the solution eventually adopted was to front-end each IBM mainframe with a

clearing and accounting to money transfer services. The network has been reduced, and the system can handle bank-credit and debit cards which being introduced in New Zealand.

Databank now also supports a range of specialised services directly connected with banking process. These include a bank account reconciliation service, and an accounting analysis package. These currently serve 7,000 users.

Many of the core government departments, larger companies, with their own computer equipment, are recording employees' payments on magnetic tape direct input to the Databank system.

Such "paperless" transactions now account for about 10% of New Zealand banks' business. This is described by Shaw as "reasonable proportion" of the country's. It is nowhere near the UK's.

Shaw admits that, at the time, high expectations of "electronic banking" were thought that "technology" would provide the answers, but it is now seen that people's limiting factor.

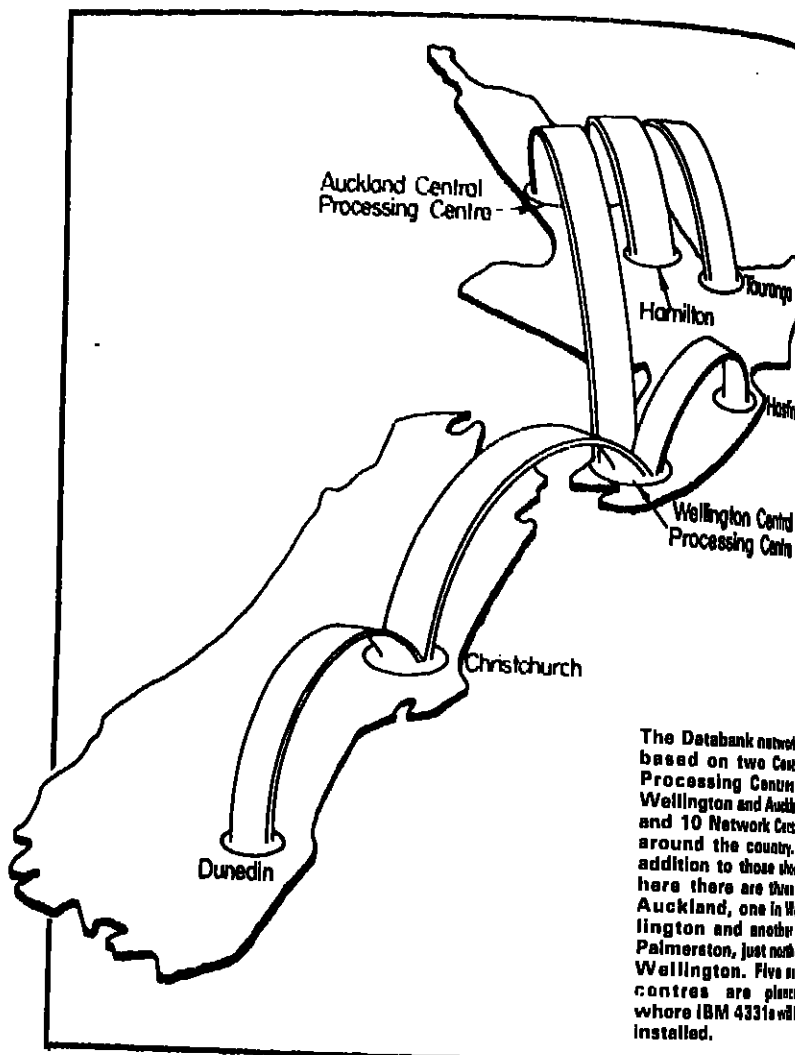
Databank is owned jointly by the five banks, and run by an independent chairman and board consisting of representatives of each bank.

The banks own their own terminals and controllers, and are charged on a throughput basis for use of the network.

With five competitive banks using the same computer system, questions of confidentiality clearly arise. Each bank's individual bank data is fully protected from access to accounts at another bank, the same bank is severely limited.

As for confidentiality, banks' individual development plans, there has been no need from the common network to individual bank to disclose development plans with the bank, without this being obvious to its rivals. Shaw, though, says Shaw, "there are no talk among themselves."

From small beginnings with seven staff, Databank has grown to be the largest private sector DP operation in the southern hemisphere, with about 1,000 employees and an investment of £19 million and exceeding £10 million in growing work.



Communications 80

Communications Equipment and Systems National Exhibition Centre Birmingham England 15 April - 18 April 1980

AN INVITATION TO

Communications 80, the fifth in a series of international expositions dealing with the applications of communications equipment and systems, particularly in the major growth areas of data and business communications which are being created by the converging technologies of computing and telecommunications. The other important themes of the exposition are PTT telecommunications, civil fixed and mobile radio and emergency communications.

Communications 80 will attract visitors from all over the world (from 69 countries at the last event in 1976) who will be coming to see the latest developments in communications technology displayed by leading international manufacturers. Many of the visitors will also attend the integral conference, organised by the Institution of Electrical Engineers in association with leading international learned societies, to learn about the latest technical advances in communications equipment and systems.

Communications 80, the world's leading international exposition in the field, is actively supported by the International Telecommunication Union - the world telecommunications authority representing 153 governments; the British government, through the Home Office; the British Post Office; Cable and Wireless Ltd, and the two main UK trade associations - the Electronic Engineering Association and the Telecommunications Engineering and Manufacturing Association.

Please make a note of the dates and venue of Communications 80 - Tuesday 15 April to Friday 18 April 1980, at the National Exhibition Centre, Birmingham, England.

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Univac communications processor makes a hit with the airlines

THE new Univac DCP-40 communications processor is a hit in the airlines business. Following an order for 12 from SAS (CW, November 1, 1979), Univac has received orders for 21 from SITA, the international telecommunications network operator which serves international airlines.

Already based on Univac 400 series processors, SITA is implementing a new Data Transport Network, DTN, which initially will consist of nine interconnected nodes. Like SAS, SITA will also be using a special airline version of Univac's Telon networking software. The DCP-40 is a newly developed fast 16-bit minicomputer and is built using the Motorola 10800 high-speed bit-slice microprocessor.

Finnair is also buying one DCP-40 as well as two of the equally successful new Univac 1100-80 mainframes, which are built using the same technology.

Univac reports that in the first four months of marketing, more than 100 1100-80s worth more than \$70 million were ordered, and that the new machine could turn into an even bigger success than the company's other big seller, the larger 1100-80.

Hitachi leads race for China

JAPAN'S Hitachi now looks way ahead of the field in the race to compete China.

In September the company was said to have won an order from the Bank of China for six of its medium-scale M-series mainframes (CW, September 13, 1979). Hitachi has now announced that it is to begin work on a \$4 million order from the Bank of China in March. The order is for 11 medium-scale M-series machines and 21 office computers.

IBM has long had its eye on the Bank of China, which has more than 40,000 branches throughout the People's Republic.

Combat simulator

COMPUTER generated images projected on the inside of 40-foot domes are to be used by the US Navy to train pilots for the F/A-18 Hornet fighter aircraft.

Canadian viewdata field trials

From page 19

Several speakers will join in a half-day session on the Canadian viewdata scene at the Viewdata 80 conference in London in March.

Three companies are making Toldon terminals so far — SED Systems, Norpak and Northern Telecom — and 1,600 terminals have been ordered for the various trials.

One scheme, the Vidon project planned by Alberta Government Telephones, is to start with 100 terminals on a dedicated network of cable pairs using packet format transmission, and grow to 2,000 terminals through an agreement with real estate developers whereby cable links will be installed in new houses as they are built.

Manitoba Telephone System has two separate projects under development. One in the Winnipeg area, Project Ida, is to start at the end of January with 37 terminals on a packet switched coaxial cable network and provide meter reading and alarm services as well as information.

Another project will provide 150 households in the town of Elie with fibre optic links for all communication services (CW August 24, 1979).

Berlin seminar on commercial use of US Space Shuttle

THE new manufacturing and processing techniques that will be made possible by the US Space Shuttle are to be discussed at a seminar in Berlin next month.

Entitled Utilisation of the Space Shuttle, the seminar will be co-ordinated by Dr Joel Levy, a consultant to the National Aeronautics and Space Administration, who has predicted that by the year 2000 the shuttle space transportation system could generate up to \$80 billion in commercial revenues.

Among the topics to be covered during the seminar are the production of semiconductor crystals, pharmaceutical materials and thin-film electronic devices in zero gravity.

More details on the seminar can be obtained from the Congress Organisation, Joachimstrasse 15, D-1000 Berlin 15.

Fujitsu strengthens its foothold in Australia

JAPAN'S Fujitsu has picked up two important orders in Australia bringing its base of medium and large-scale mainframes there to six. It has finally landed the Australian Bureau of Statistics contract with its biggest machine, the M-200, and the first M-160F outside Japan is going to an Adelaide building society.

The Bureau of Statistics contract was almost landed by Fujitsu with an M-190 two years ago, but after a suggestion that individuals associated with Fujitsu had been in a privileged

position during the selection process, Australian premier Malcolm Fraser ordered a re-run of the selection.

Price-performance and locally procured content are reported to have won Fujitsu the contract on the second round. Valued at \$US 25 million, the machine will start as a 6Mb M-200, but will be extended to a dual processor with the two processors sharing 12 megabytes of main memory. It will ultimately be backed by 20,000 megabytes on disc. It will run under the OSIV/F4

operating system, which is Fujitsu's rewrite of IBM's MVS.

MSP of the UK will supply its Testmanager program and the Status information retrieval package developed at Harwell atomic research laboratories will be used.

The Australian high level job control language JOL from Clarke Computer Software will also be used.

Online Computer Services of Adelaide, the data processing subsidiary of the Co-operative Building Society, is installing a Fujitsu M-160F early this year. The three megabyte mainframe, worth about \$1.2 million, will be used for the building society's own processing and to provide services to four other building societies.

The Fujitsu F-series consists of four models announced in response to IBM's 4300 series and extending in power from below the 4331 to well above the 4341; the M-160F is the largest and will run under Fujitsu's OSIV/X8 operating system which was developed to provide emulation for the company's earlier 230 series of mainframes.

The Australian government Commonwealth Scientific and Industrial Research Organisation, CSIRO, has a Fujitsu M-190, while earlier models of the

continuing to expand its production capacity at an aggressive rate, National Semiconductor has announced plans to erect a new semiconductor wafer fabrication plant in Vancouver, Washington, US.

The move follows the trend set by several semiconductor manufacturers in expanding outside the growing restrictions on both people and housing found in California's Santa Clara valley, the home of the industry.

A 200,000 square foot factory is to be built that should eventually employ some 2,000 people. It is scheduled to be operational by 1981.

The need to locate in an area that would attract a large number of technical professionals was one of the main reasons for choosing Vancouver as the new site, said a company spokesman.

Earlier this year, National revealed plans to expand its facility in Greenock, Scotland with a £45 million extension (CW, July 26).

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CORAL NEWS

Coral News appears every quarter to provide users with up-to-date information, news and opinions. Items for inclusion should be sent to the Coral Press Co-ordinator, The National Computing Centre, Oxford Road, Manchester M1 7ED

STANDARDISATION:
A British Standard for CORAL 66 has been issued by BSI and is available at £1.50 from their office in 101 Pentonville Road London N1 9PD. The standard incorporates comments made on the MOD Official Definition — the Blue Book CORAL 66 has been accepted by ISO as a candidate for international standardisation and they are circulating the draft for international reactions.

CORAL AVAILABILITY:
From four compilers in 1967, compilers now cover 36 machine ranges and are available or under development for machines from the following manufacturers: CIL, Computer Automation, Control Data, CTL, Data General, DEC, Ferranti, GEC, Hawlett Packard, Honeywell, IBM, ICL, Intel, Kongsberg, Modcomp, Motorola, Nordan, Norsk Data, Parkin Elmar, Plessey, Prime, Rank Xerox, SEL, Smiths Industries, Sperry Univac and Texas Instruments.

TRAINING:
Courses in CORAL 66 are regularly offered by several organisations including John Bell, CEGS, Ferranti, GEC NCC, Preston Polytechnic and SDL NCC's Real Time Program Design course was developed for the CORAL 66 groups, and runs for two weeks starting 3rd September and 19th November.

BOOKS:
Two books are available on CORAL 66. John Webb's "CORAL 66 Programming" and Halliwell and Edwards' "A Course in CORAL 66". The books are £5.00 each from technical bookshops or NCC — the publisher.

MASCOT:
MASCOT — Modular Approach to System Construction, Operation and Test — is an integrated approach to design, implementation and testing of real-time parallel processing software based on a form of modular decomposition.

A CORAL CASE STUDY

Now software developed by Warren Point Limited of Slough for automatic aircraft testing could improve online safety.

The complexity of modern aircraft systems requires stringent and clear maintenance procedures and testing takes place on a variety of equipment in different environments. ATLAS, an international test language, was published in 1968, so that specifications could be written in an unambiguous English language subset. Warren Point's 'mica' (machine independence compiler for Atlas) compiles Atlas routines into programmed sequences for automatic testing equipment.

'mica' has three main parts. A table-driven pre-compiler which checks syntax and semantics and produces intermediate code.

A resource analyser to check the availability of resources and switch paths. A code generator which converts the intermediate code into directly executable machine code for the target automatic test equipment.

CORAL 66 was selected for writing 'mica' because the complexity of Atlas called for a compiler considerably larger than conventional compilers. The result was the need for a language with a procedural block structure and a low overhead on machine code. The compiler was developed on a PDP 11/34 configuration and will run on as little as 42k of working store.

Being table driven, 'mica' uses only the necessary subset of Atlas needed for a particular procedure. It will also be able to accommodate any future enhancements to the Atlas language.

Further implementation of their portable CORAL 66 compiler have been announced by Systems Designers Ltd. The latest compilers are on Motorola M6800, Intel 8086 and Hewlett Packard HP 1000. SDI say that they are also producing a CORAL compiler that will cross-compile from the PDP/11 and the Ferranti Argus 700 to the Plessey Milpro.

CERN (The European Organisation for Nuclear Research) Geneva uses CORAL 66 on Ferranti Argus computers.

GEC Semiconductor have announced a CORAL compiler for the Intel 8086 microprocessor. The new compiler RCC 86 is developed from the RCC 80 of which 50 packages are installed and requires 64K bytes of RAM a floppy disc and the ISIS II operating system. The compiler can be supplied on floppy disc for £5,000 and there is a £250 annual maintenance charge. Contact GEC (01) 904 9303.

YARD have released a production version of the MASCOT Kernel for the Ferranti F1001 microprocessor. Written in CORAL the Kernel is configurable to serve a variety of applications and a particular facility may be excluded in order to provide more memory and processing power. Current price for binary issue on floppy disc is £1250 which includes a year's updates — Contact YARD Glasgow (041) 204 2737.

Digital Equipment Co. Ltd has been marketing CORAL's features and benefits overseas for some time and reports that their CORAL systems can be found in Denmark, Norway, Sweden and Switzerland for power plant control; in the Far East for Airport Passenger Check-in/Baggage Handling; commercial message processing in the United States.

Furthermore, DEC report that their light-dack simulator systems are helped by CORAL in Germany, as are Communications Research Applications in Italy. CORAL is also used in the military environment in many European countries, as well as in the Far East, in the Middle East, CORAL is used for running a Document Storage and Retrieval System.

CORAL

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TANGENT COMPUTER SERVICES is a successful Software Support organisation with diverse U.K. and international activities. As part of our current expansion programme, we have recently opened an office at the World Trade Centre in New York to control our U.S. operations. In the U.K. our head office requires to augment its management team by the following positions:—

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We are looking for a person with sufficient D.P. experience and man management skills to assist with the selection and management of both permanent and contract staff. The diverse nature of the position will necessitate some travel both in the U.K. and overseas.

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To enhance our substantial contract activities, we seek a further sales executive with proven experience. The personal prerequisites are self-motivation and an understanding of today's data processing techniques.

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Applicants should have at least two years' programming experience using Fortran or an Assembler Language. Analytical experience is also desirable.

In addition to the above, applicants should be educated to GCE 'A' level or equivalent — the subjects to include Mathematics. Preferred age range is mid-twenties.

We offer excellent conditions of employment with many social and recreational amenities and a salary rising to a maximum of £9,708 per annum.

Applications in writing stating qualifications and experience to date should be sent to:—
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SYSTEMS ANALYST/DESIGNER

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£6,806-£7,088 p.a. plus £10 per month "on account" pending result of comparability study

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Attractive fringe benefits, payable in appropriate cases, may include reduced housing accommodation, reasonable removal expenses, legal and estate agents' fees applicable to house sale and purchase, lodging and settling-in allowance and an essential car user allowance.
The appointment is terminable at the discretion of the undersigned and by telephoning Su Taylor on Ext. 208 and 209.
Previous applicants need not apply.
Application forms may be obtained from the undersigned or by telephoning Su Taylor on Ext. 208 and 209.
Forms should be returned not later than 26th January, 1980, to:
E. C. SIMPSON
Director of Administration and Finance
Lay House, Yoden Way, Peterlee, Co. Durham
Telephone: 0447 60780/81 89398

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A substantial Danish group has a well-established computer services operation working in Kuwait and expansion has created the need for a computer field engineer to be responsible for equipment servicing throughout the country. Installations comprise DEC PDP 11 cpu's and peripherals with some CDC disk units and Tektronic/Calcomp graphic display units. The company provides business computer systems, software consultancy and computer based telephone systems. Experienced engineers with a sound background of servicing these types of hardware will find this an exceptional opportunity to join an effective and expanding European group in one of the most stable Middle East locations.

The company is paying an attractive salary for the area together with good benefits including a very generous car allowance, return air fares to home country for 1 month's annual holiday, and free furnished, air conditioned accommodation. The appointment is initially for 2 years with 4 weeks bonus on completion and the option to continue.

The requirement is urgent and interviews will be conducted in the U.K., week commencing 21st January.

Engineers having relevant experience (programming or diagnostics knowledge would be added advantages) should telephone immediately to discuss the requirement and how to apply. Either single or married status is acceptable. Quote reference CW100-C.

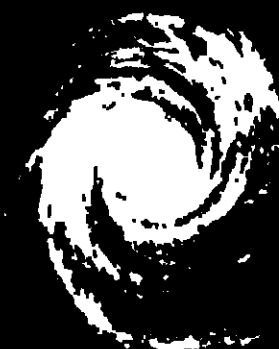
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Manchester M22 5RG
Tel. 061-436 3122

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A COMPUTER WEEKLY HANDBOOK BASIC FILE DESIGN BY OWEN HANSON

This book provides a brief but authoritative review of the most frequently used file organisation techniques, and of related subjects such as data security and software aids.

The file designer is shown how to choose between the available techniques on the basis of known or forecast information rather than rule-of-thumb, and methods of ensuring that the correct choice has been made are given.

New work carried out by the systems analysis division of the City University Business School, London, is linked with previously published information to provide methods of optimising the performance of sequential, direct and indexed files. Marked improvements can be achieved, particularly with direct files, which are worthy of wider use than at present.

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Contact: Jim Baker

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Contact: Margaret Stevens

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Contact: Bev Stevens

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Contact: Jim Baker

Production Control Systems

Rugby **c. £7,500**
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Contact: Bev Stevens

Compiler Designers

Near Windsor **£8,000 - £10,000**
One of the leading mini-computer manufacturers wish to increase their software development group to meet the demand for efficient and versatile systems in the various sections of d.p. The Company's emphasis on easy-to-use systems has many implications for the design of its compilers for the 1980's. Applicants must have some practical knowledge of compiler design. If you know that you can design the best compiler, now is your chance to show your ability to apply innovative and creative techniques.

Contact: Mike Creamer

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Our Hampshire client is installing a new Redifon R830 machine early in 1980 and wish to recruit several Programmers to form a new section to deal with financial, accounting and insurance projects. Candidates must be fully conversant with applications programming in a high-level language (e.g. COBOL) on a proprietary mini-computer system. Knowledge of word-processing would be an added attraction. The company offers tremendous benefits including a mortgage subsidy, non-contributory pension, generous relocation package, etc.

Contact: Mike Creamer

JAMES BAKER ASSOCIATES,
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Our client, a progressive IBM installation is seeking a COBOL Programmer with sound IBM experience preferably gained in a manufacturing environment.

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This medium sized IBM installation offers a wide range of involvement for an experienced Analyst with good IBM knowledge and an engineering/manufacturing background.

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If you have around 2 years experience in a fairly large environment our client can offer a the latest IBM hardware and systems. You need good experience, on any hardware. Programming knowledge an asset.

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This go-ahead organisation requires a Senior Programmer with good COBOL skills preferably on Honeywell hardware. You will be involved in a wide range of developments, and must be self-motivated and willing to take responsibility.

LIVERPOOL **£7,300 + bonus**
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This large organisation seeks a number of Senior Analysts to cover major developments on mini and mainframe hardware. A background of large systems development together with a good academic record, preferably to degree level is required.

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This prestigious client requires further hardware design expertise in the real-time process control area. Conditions of employment are excellent as are career progression possibilities.

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This small, friendly installation is seeking a young RPGII Programmer with over 12 months experience. Hardware is IBM S34 with on-line developments.

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This major IBM user is committed to large scale developments and requires additional staff with over 2 years experience. You should combine good COBOL skills with some analysis involvement. Machine background is not important as excellent training is available.

MERSEYSIDE **to £6,500 + bonus**
SENIOR ANALYSTS
Our client offers training on IBM CICS, DL1 and SNA techniques where required if you can combine a programming background with in-depth analysis experience. This is a unique opportunity with a progressive company.

MANCHESTER **to £6,500**
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MANCHESTER **to £7,000**
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Phone STEVE SYKES on LEEDS (0532) 444185 (daytime) or LEEDS (0532) 444187 (evenings and weekends) for these and other NORTH WEST vacancies, or write with brief details (no stamp required) to Lorien Computer Services, FREEPOST, Leeds LS7 3YY.

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N. LONDON

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COBOL PROGRAMMERS and ANALYST/PROGRAMMERS

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The BBC Television Service has a computer graphics system which was used successfully last year to support the General Election Results programme.

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£9,591-£12,144 p.a.

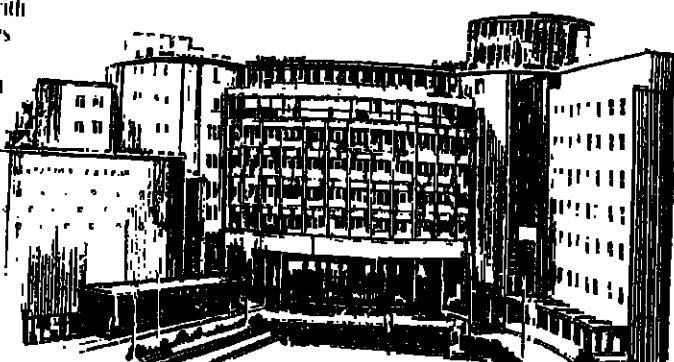
Broadcasting presents a different environment to that experienced by many analysts and so a flexibility to the work involved and adaptability of approach is paramount as well as the ability to communicate effectively with artistic staff. An established record of systems design and implementation is necessary, with preference being given to candidates with computer graphics and PDP11 experience. An interest in television output, e.g. Current Affairs, Sport, etc. and in art and design would be desirable. Reference 1834/CW.

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£7,341-£8,751 p.a.

An Analyst Programmer is required to help develop additional software. The successful applicant should have the experience

and willingness to accept a wide variety of software assignments from applications programs to systems code. Current software is mainly in PDP11 assembler and RTL2 running under RSX-11M. Further developments in BASIC are envisaged. Experience in some of these, but especially Macro-11 is considered a pre-requisite and an interest in graphics would be advantageous. Reference 1835/CW.

Starting salaries according to qualifications and experience. For further information and an application form telephone Sally Spencer on 01-743 8000 Ext. 4593/4 or contact us immediately for an application form (quote relevant reference number and enclose s.a.c.) BBC appointments, London W1A 1AA Tel. 01-580 4468. Ext. 4619.



BBC tv

COULTER ELECTRONICS LIMITED

has an opening for

SOFTWARE ENGINEER

Coulter Electronics Limited is the world's leader in particle counting and timing instrumentation used extensively in the medical and industrial fields. Our current product range already includes microprocessor based systems and to support this range and to develop new products, we need a Software Engineer in being programming expertise in our existing development team.

The successful candidate will have at least 2 years' experience in programming multi or microcomputers in assembly and high level languages for real time applications and experience in systems design and analysis. He/she will understand the technology and interfacing with electronics and systems engineers and be able to liaise easily with the development team.

The position is particularly important since it is the first of its type within the company and combined with our policy of expansion in our development activities, it provides an excellent opportunity to create and develop the software which will undoubtedly support our future development.

Candidates should hold a 1st Degree standard and have the considerable experience and expertise required for this important post.

The post will be full-time initially as independent but will move to full-time later by mid-1980.

In return for a generous salary, we offer a Productivity Bonus Scheme, company share scheme, pension, 4 weeks holiday, good sickness and life insurance, and the kind of conditions to be expected from a growth stage company.

Applications are invited to contact MR. P. W. WOODS, PERSONNEL MANAGER, COULTER ELECTRONICS LIMITED, COLDHARBOUR LANE, HARPENDEN, Herts. Tel. HARPENDEN 03161.



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COMPUTER OPERATIONS SUPERVISOR

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SENIOR COMPUTER OPERATOR

c. £3,650

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Vacancies have arisen in the Association's computer department for a Computer Operations Supervisor and a Senior Computer Operator/Operations Job. Controllers, interactive computer systems would be an advantage. Normal office hours apply. Pleasant working conditions in a modern central office. 4 weeks holiday, life insurance and an optional pension scheme are offered.

For further details and an application form, please contact the Personnel Manager, Oxford House, 13/15 Magdalen Street, Oxford OX1 3BP. Telephone: Oxford (0865) 722281.

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(DR/336) All Levels IBM COBOL ASSEMBLER to £2000
(DR/337) 3+ years ICL COBOL Supervising to £2000
(DR/338) 4+ years ICL COBOL/RPG? to £2700

MANCHESTER

(DR/339) 12+ months ICL COBOL to £2000
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c.£6,500 Surrey

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Holland

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The company offers, in addition to a substantial salary, a) Full overseas relocation expenses b) 8% holiday bonus c) Resettlement advance d) Initial accommodation allowance for you and your family e) assistance with home purchase f) medical and pension schemes etc. Interviews will be held in London during January and firm offers of employment made within 10 days. You will also be given the opportunity of visiting our client in Holland to sample the working and living environment. Expect to negotiate in the range: Ref: 10/1/A

£11-17K

T.P. Software Engineers

Greater London, Salary: to £12K

Our client is a Major U.S. owned Systems and Product Support multi-national recognised as a market leader in its chosen field. Owing to continued expansion in U.K. (particularly Central and Southern England) the company is seeking top calibre Teleprocessing personnel. The Company has a stated preference for candidates with a proven record in the installation and support of software packages to both new and existing customers. Candidates who can offer in-depth and

continuous exposure in an advanced IBM 370 or 303X T.P. environment of PDP 11 or VAX 11 environment are especially favoured as is additional knowledge of TOTAL, SHADOW or RAMIS. You will probably be employed as a Software Programmer or Systems Engineer with a Manufacturer or large scale user. First interviews will be conducted in our offices in mid and late January. Ref: 10/1/B

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Home Counties, Salary: to £8.5K

A Mini-Computer Manufacturer and Total Systems Supplier based in the Northern Home Counties with easy access by road and rail to both London and the Midlands has requested LOGISTIX to identify dynamic technicians for several varied challenging positions. Having designed a program building language to enable naive D.P. users to write their own programs, the company now requires Development Programmers to write and code this new product and provide customer support once the software is installed. Successful candidates will ideally have 2 years COBOL or ASSEMBLER experience on any leading mini-computer coupled with extensive interactive data-entry experience. Probably they will be in their mid 20's (although age is not expected to be a barrier) and will have some

experience of customer support both in-house and on-site. It is anticipated that this new product will radically alter programming techniques and consequently many programmers will need to re-appraise their own career paths. These positions will therefore appeal to those who prefer to mould their careers according to their wishes rather than be carried along by events. Simultaneously, a second division of the company requires Programmer/Analysts to develop accounting systems based on an Applications Package used by the U.S. based parent company. Whilst the hardware used will be a market leading mini the successful candidate will not necessarily have mini-experience although past applications expertise should have been in the financial area. Ref: 10/1/C

Programmers & Consultants

London and Thames Valley, Salary: to £11K

An internationally renowned Software Products and Consultancy Group is seeking additional Programming and Design personnel at all levels of experience. Generally, applicants should either be working at Project Leader, Systems Designer or Senior Programmer levels in either an on-line or Data-Base environment. Experience with any T.P. monitor or DBMS package will reflect in the already generous salaries offered. Your commercial expertise should preferably have included involvement in hardware selection, organisational reviews and systems implementation. You will be given an opportunity to act in both pre and

post-sales once the company's initial four weeks product orientation course is completed. The company offers an outstanding portfolio of company benefits including a minimum of four weeks holiday allowance. Group medical insurance and life assurance is already in operation whilst the company operates a bonus scheme for extraordinary performance. In addition full removal assistance is available where appropriate. Local interviews in London, Reading area or our offices will be arranged to suit individual requirements during January and February. Ref: 10/1/D

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PROJECT SUPPORT OFFICER

within the University's ICL PASCAL compiler project. The successful applicant will be responsible for the maintenance of the compiler involving a substantial amount of liaison with the computer manufacturer, and will assist in the development programme. No specific programming experience is necessary but familiarity with use of computer operating systems and utility software is essential. The post will be tenable for a period of 2 years. Salary in the range 18 — £2775-28355 p.a.

Applications giving date of birth, details of qualifications and experience and the names and addresses of two referees should be sent to Mrs P. Vaughan-Smith, Staffing Department, The University, Southampton SO9 4NL, as far as possible and from whom obtained. Please quote ref: 1109/A/CW.

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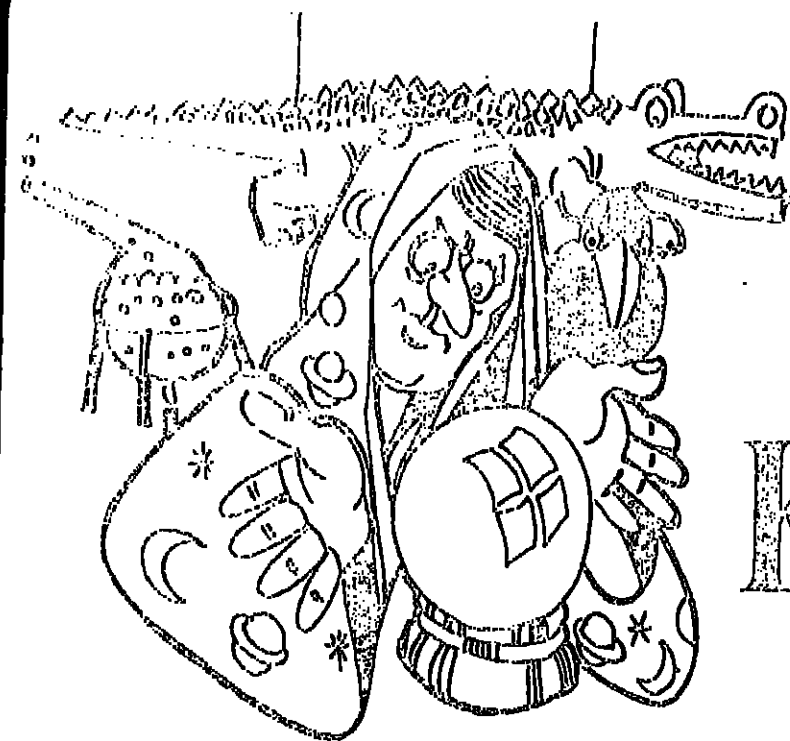
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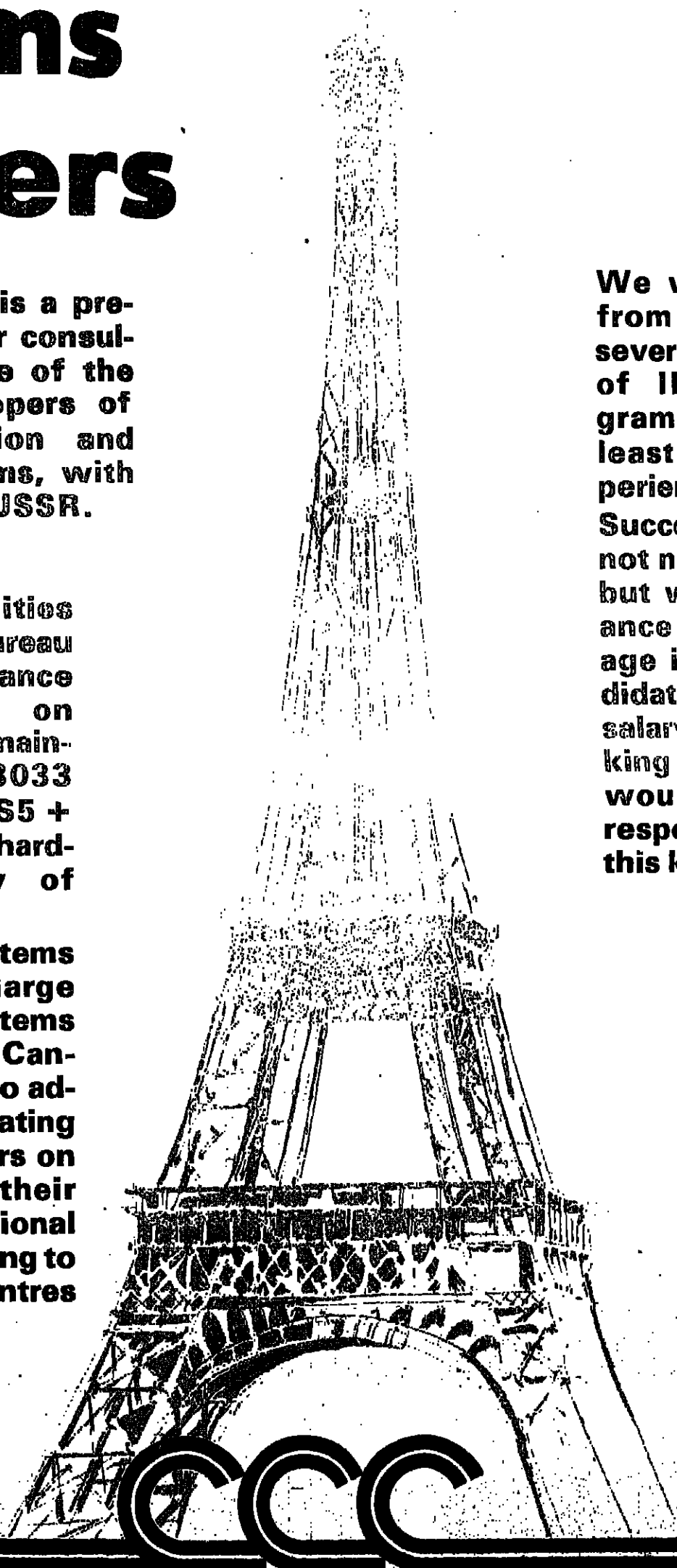
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CW2/1



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CVM/2

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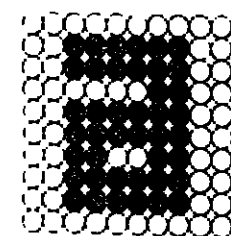
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London

Salaries negotiable

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Candidates should have a minimum of 18 months experience. IBM OS or PDP-11 is preferred but any COBOL is acceptable. Previous experience in Viewdata or publications systems is not necessary.

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Contact: Bernard Kiernan

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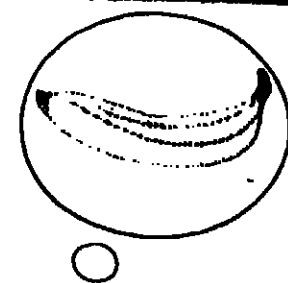
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Please telephone for interview (in Birmingham or London) our London or Manchester Offices quoting Ref. JG19.

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Programming in Music Publishing

If you have approximately two years' experience of RPG II programming, preferably on line applications such as order entry, join Polygram Publishing Division, as part of their international M.I.S. team.

Based in Ilford, the team is responsible for designing, developing and supporting computer systems for the Divisions' various world wide publishing houses.

Initially you will be involved in the development of order entry and accounting packages, this will mean working abroad for short periods during the early part of 1980. An IBM system 34 is being installed at Ilford during 1980, part of a world wide hardware installation programme. IBM mainframe equipment is also currently in use and there will be every opportunity to work on projects using this equipment.

Experience of Data processing within the publishing industry would be an added advantage.

There is a comprehensive employment package (including luncheon vouchers, annual bonus and staff discounts).

Salary will be negotiable according to experience.

If you are interested please send your c.v., or write or telephone for an application form to:-

Ann Stradwick,
Polygram Publishing Division, 60-70 Roden Street,
Ilford, Telephone: 01-478 6922.

polygram

JBA

Senior Software Lecturer & Computer Operations Supervisor

The Technical Marketing Department of this large computer manufacturer runs an Education Centre for customer training, incorporating several in-house mini-computers which provide for training aid, demonstrations and benchmarking.

Senior Software Lecturer c.£8,000

Candidates, male or female, will preferably be educated to degree standard, have several years experience in the industry involving some exposure to the intricacies of operating system software. In addition to giving courses, the lecturer will be expected to prepare new course material and keep existing courses up to date. Occasional travel may be necessary.

Computer Operations Supervisor c.£7,500

The Supervisor will be responsible for the satisfactory operation of the computers, ensuring that the right hardware and software is available and kept up to date and for allocating computer time. The post will be of interest to programmers or engineers, male or female, who wish to become familiar with the operations management aspects of a computer installation.

These posts are situated in a pleasant part of Hertfordshire close to London's green belt.

Contact: Mike Creamer,
James Baker Associates,
International Personnel Consultants,
32 Savile Row, London W1.
Tel: 01-439 9311.

SALES

CORK

A market leader in the manufacture and sale of small to medium range business computers with a positive approach to marketing is seeking a high calibre Sales Professional to develop and increase its customer base throughout Southern Ireland. The ideal candidate will have a demonstrable track record in the sale of disc based business systems and will possess the drive and ambition necessary to succeed in a competitive and fast growing environment. A knowledge of the Irish Market would be very useful. Leadership qualities and organisational skills combined with the ability to motivate people will lead to managerial status for the right person in the short term.

The company offers an attractive remuneration package which includes a basic salary of £7,000, a minimum earnings guarantee and a 21p per mile car allowance. Realistic targets will give an on quota income of around £16,000 and relocation expenses are payable in appropriate circumstances.

Please write or telephone Gerald Delamere at the Dublin office (0001 78 95 77).

QUOTA EARNINGS — £16,000

RPGII PROGRAMMERS IN CONSULTANCY

DUBLIN

£5,000-£8,000

Our client is a major Irish accounting and management consultancy practice, employing over 500 people and providing a comprehensive range of professional services to Irish and international companies.

You will be required to work on various outside clients' projects as well as the additional development requirements of our own in-house facility.

If you have at least 12 months' experience of RPGII our client will be very interested, but if you have five years plus they still want you and will pay more!

Successful candidates will be offered whatever their experience warrants and a future working to high professional standards in a company committed to individual programmes for training and development.

Please write or telephone Gerald Delamere at the Dublin office (0001 78 95 77).
CWD/2

SYSTEMS ANALYST

c. £8,500

IRISH MIDLANDS

Our client, a manufacturing company with an established ultra modern plant accessible to Dublin, requires an experienced Systems Analyst to join a young team.

The person appointed will be assistant to the DPM. The opportunity exists for someone to look into other development areas, e.g. the use of micro and process control systems. In addition to the current ones other manufacturing systems have to be developed.

The successful candidate will have at least six years in DP with a minimum of three in systems design/analysis. Manufacturing experience is very desirable and a programming background would be helpful.

The company offers this outstanding opportunity to secure very interesting work. In addition to a competitive salary and excellent working conditions in a new installation there is a life assurance and pension scheme. Assistance will be given with relocation costs where applicable.

Please write or telephone Gerald Delamere at the Dublin office (0001 78 95 77).
CWD/3

ANALYSTS and PROGRAMMERS

SOUTHERN IRELAND

£5,000-£11,000

In addition to the above positions we have many clients all over Ireland who are seeking high calibre computer men and women. Our clients, both Manufacturers and Users, want good commercial systems experience and applicants with manufacturing experience will be particularly welcome as new foreign companies are coming to Ireland and setting up new facilities every month. Prospects are good, really good, with start-up positions available for people who don't want to be doing the same thing year after year. If you genuinely want to work in Dublin or Ireland contact GERALD DELAMERE at 0001 78 95 77 or write to him at 24 Lower Leeson Street, Dublin 2.

CWD/4



Central Computing Consultants

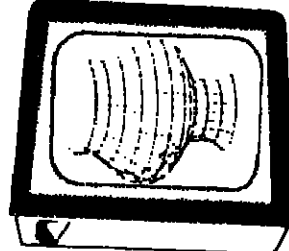
LONDON: 8A Lower Grosvenor Place, London SW1W 0EN, England. Telephone: 01-834 7105. Telex: 918582

DUBLIN: Canberra House, 24 Lower Leeson Street, Dublin 2. Telephone: 789577 (5 lines)



"Computervision Europe, with operations in 10 European countries, is part of the Computervision Corporation, a major U.S. company, which is the world leader in the design and manufacture of Computer Graphics Turn Key Systems - one of the fastest growing high technology industries. Computervision's Computer-Aided Design/Computer Aided Manufacturing (CAD/CAM) systems, and comprehensive support services, are helping customers to increase productivity worldwide. We are a young, dynamic, highly profitable organisation currently embarked upon a major expansion programme to satisfy market demand."

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* SOUTH ENGLAND * MIDLANDS * SCOTLAND

Field Service Engineers

We currently have several opportunities throughout SOUTHERN ENGLAND, THE MIDLANDS and SCOTLAND for Field Service Engineers, with a good knowledge of electronics and 2/3 years' field experience in the computer industry.

The successful candidates will be involved with the installation, commissioning and on-going support activities to their respective customer base.

Experience of mini-computer systems and associated peripherals is required, although previous experience of CAD systems is not essential as full product training will be provided.

Salaries will be up to £8,500 pa plus profit sharing bonus, and the associated benefits package will include free BUPA and life assurance cover. Assistance will be given with relocation expenses, where appropriate.

Application Engineers

We currently have opportunities in THE MIDLANDS and SOUTHERN ENGLAND for Application Engineers with experience of mechanical design/numerical control disciplines.

The successful candidates will provide some training and on-going application support services to both new and existing customers for our CAD/CAM systems.

A qualification of degree level is required together with several years experience of their respective discipline. A background in the use of engineering software or CAD/CAM will be an advantage.

We shall be commencing interviews for these positions from 16th January 1980 so if you are interested please contact Mike Fuller, Customer Support Manager, or Bob Powell, Administration Manager, Computervision Limited, Penn Street Village, Amersham, Bucks. Tel: High Wycombe (0494) 714771.



Cullinane
(U.K.) Ltd

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Central London

£7-10k + Car

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As part of their U.K. and European expansion programme they are seeking to recruit a number of people to support and develop their existing customer base.

Ideal candidates will have a good all round knowledge of IBM systems, experience of database management techniques and should have worked in a support environment. However the company appreciates that the ideal is not always attainable and is interested in meeting those who possess any of the attributes outlined above and who have a desire to develop the others.

To those with genuine technical and personal skills, and an interest in database techniques this is a real opportunity to join what is probably the most respected company in the software products industry.

For full details telephone Kevin McCourt or write enclosing a Curriculum Vitae quoting reference KTM.3002.



Lloyd Chapman
Associates

123, New Bond Street, London W1Y 0HR 01-408 1670

DENTAL ESTIMATES BOARD EASTBOURNE

COMPUTER OPERATIONS MANAGER

The Dental Estimates Board operate an ICL 1904S tape-disc machine and require an Operations Manager, responsible to the Computer Manager.

Applicants should have experience of 1900 operations management, including a good working knowledge of GEORGE operating systems.

Starting salary will be in the range £7,032-£8,551 per annum.

Application form, to be returned by 30th January, 1980, and further details may be obtained from the Clerk to the Board, Dental Estimates Board, Eastbourne, East Sussex, BN20 8AD (Telephone Eastbourne (0323) 25552, Extension 33).

Gloucester

Assistant Operations Manager

Salary up to £6936 p.a.

The County Council has installed a large Honeywell level 6G system which will service six level 6 mini computers online in the District Council's plus a network of terminals. Applicants should have relevant experience for working in this demanding environment.

For details ring Judy Hubbard - Gloucester 21444 Ext 520 or write Computer Services Manager, Gloucestershire County Council, Quayside Wing, Shire Hall, Gloucester GL1 2TJ.

Software Administration Manager

North London

circa £10,000

Our client, a market leader in the supply of advanced hardware and software systems to the colour printing, and graphic arts industries, wishes to recruit an experienced person into the new position of Software Administration Manager.

The person appointed will have a proven record as a manager, or project leader, in the computer industry which will have been reached via programming at a detailed implementation level. He/She will have a talent for organization and administration.

The position requires new procedures and standards to be implemented which will result in improved efficiency in the collection, storage, documentation and update of software produced by a number of engineering project teams. Prime requirements are self motivation and the ability to achieve results with the co-operation of a number of managers and chief engineers.

The salary offered is meant to reflect the importance of the position within the Company. In addition the Company offers a bonus scheme, 5% contributory pension, flexitime, season ticket loan scheme and relocation expenses where appropriate.

If you believe you have a contribution to make in this area and would like to be considered please send your cv to Terry Harvey or contact him for an application form.



Harvey Recruitment

Executive and Computing Personnel Consultants
500 Chesham House, 150 Regent Street, London W1R 5FA Tel: 01-734 5351

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WELCOME TO 1980

OPERATORS/ SENIOR OPERATORS

£5,000 to £7,000 Inc. N. MIDDX.
If the above salary appeals to you, and you have 18 months+ IBM OS/VS1 or MVS experience, then apply now. The local government installation works on a three-shift system. Usual benefits, plus relocation expenses for the right person CW2/1

OPERATORS

c. £5,000 Inc. BERKS.
A large commercial company situated in an attractive Berkshire town requires operators for their 1900 GII + installation. They work on a three-shift system. Benefits include CPS, Subs, cant, 4 wk's' hols, and discount on company products CW2/3

BASIC PROGRAMMERS

S.E. ENGLAND £5,000-£9,500
I bet you never know how popular you were! We now have over 40 registered vacancies for BASIC and BASIC + programmers. Opportunities exist in the City, SE1, Brentford, Chatham, Amersham, Kingston, Plims and Maidenhead for people with 1½ years' or more experience. Career growth is assured and most offer very attractive perks. CW2/5

JUNIOR PROGRAMMERS

£4,500 to £5,500 S.E. ENGLAND
You have only 1 year's commercial experience? Then you are in great demand. We have a large selection of first-rate companies who need people like you. Some offer mortgage assistance to the right candidates after a short period with them CW2/2

IBM OPERATOR

c. £5,000 RICHMOND
If you have 2-3 years' 370 DOS experience with CICS, don't hesitate to apply for this excellent position. The above international company has a 4331 installation and a T.P. network. You work for 3 extended days per week - most usual company benefits CW2/4

RPG II VACANCIES

LONDON & HOME COUNTIES £5,000-£9,500
If European travel, a car and mortgage assistance interest you then several of our current list of 15 unique vacancies for RPG II programmers and analyst programmers should appeal to you. Locations are the City, N.W., W. and N. London, High Wycombe and Crawley, and many of the firms have the latest IBM 34 and 38 installations. CW/6

ARE YOU BORED TO DEATH WITH YOUR JOB?

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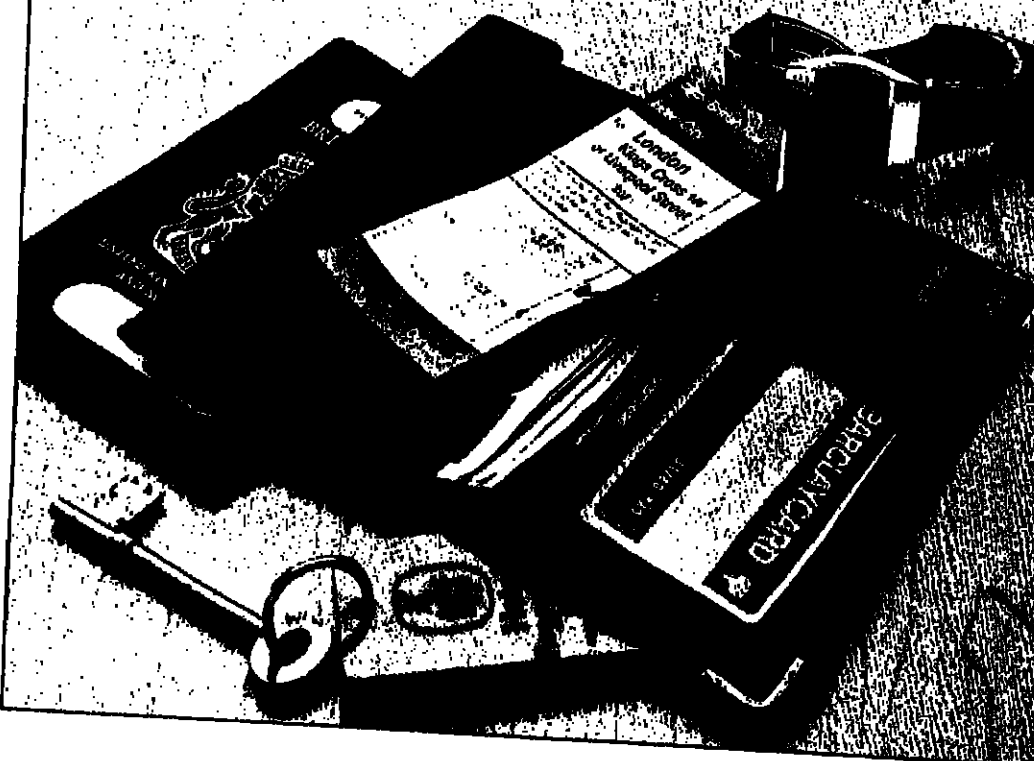
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We need Senior Computer Operations staff for consultancy and advisory positions in the UK and overseas.

We need 2900 experienced people for technical and procedural projects, preferably with 1900 background.

We need people to build and maintain VME/B operating systems, on Facilities Management contracts in the UK and overseas.

We need 2903/4 people to meet the needs of our expanding market. (Knowledge of C and C++ would be an advantage).

We need people to sustain our growth and reputation.

We need the best.

If you think we need you, ring Cathy Elgar on Reading (0734) 581258 ext. 98. We'll tell you about the success we've already had, providing a whole range of operations services in more than twenty countries, and we'll pay well. Ring us now, or write to Richard Hornblow, Operations Services, Data Skill Limited, Reading Bridge House, Reading, Berkshire RG1 8PN, quoting reference CW1585.

Data Skill Ltd
The Computer Professionals

£350 p.w.

CONTRACT SYSTEM PROGRAMMER

urgently needed
IBM 370/158
SHADOW image
in East London.

No Agents please.

Contact:
Mrs. Yain
01-886 4182

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PUTNEY AREA

1 year's experience
power/VS to take day,
daytime shift of an
oriented computer
including 1/10 machine
+300

Starting salary £5.40p
Call 8742252 and
Tim Ditzler.

SYSTEMS ANALYST/PROGRAMMER

Construction Industry

West Midlands

Expressions of interest from experienced Systems Analysts/Programmers are invited for a position in the West Midlands.

A totally integrated accounting system has been developed and is currently running on an IBM System 34. Computerised accounts, stock control, and other systems are the main part of the system. The person in this position will be responsible for the day-to-day operation of the system and for the training of staff.

At least five years' experience in Systems Analysis together with a sound knowledge of RPL/II is essential. A requirement for a degree in a relevant subject will be given to those with less experience.

A salary commensurate with the responsibilities to be undertaken is offered together with a company car. Other benefits include a contributory pension scheme and long service award. Consideration will be given to relocation packages if applicable.

Apply to the first instance giving brief details of career in writing to:

P. Robbins, Esq., Personnel Manager
Espley Tyas Group Limited
Park Hall, Salford Priors
Evesham, Worce. WR11 5SQ

ET ESLEY-TYAS

THE U.S. ARMY IN BERLIN

Supervisory Systems Analyst

Applications are invited from persons with recent experience of UNIVAC computer systems. Supervisory experience is required.

Salary is in the range DM30,000 DM37,000 p.a. depending on age and experience.

Interested applicants should write enclosing a curriculum vitae to:
Commander, Headquarters, Burtonwood Army Depot Attn. Mr. R. Prior, P.O. Box 180,
Warrington, Cheshire

U.S. ARMY

datascene international

FREELANCE CONTRACTS

Various assignments available throughout Central and Greater London, Kent, Essex, Middlesex, Surrey and East Anglia for Programmers and Analysts incorporating the following skills.

IBM: 370, PLI, ASS, COBOL, OS/VS
370, PLI, ASS, CICS, DOS/VS
370, PLI, CICS, OS/JCL
370, COBOL, OS/VS, IMS
SY, 34, RPGII, MAAPICS
3032, IMS
ICL: 1900, COBOL, GII, IDMS
HONEYWELL: LEVEL 64, COBOL, G COS
DEC: PDPII, CORAL 66, RSXII
PDPII, FORTRAN, RSXII

OVERSEAS:

IBM consultant to work in Brussels on 370/148, using COBOL running under DOS.
The person will be required to perform a detailed documentation of a major insurance system. Assignment length will be 6 months + and the ability to speak French is essential. A package of between £550 and £600/week will be paid to the right person.

Datascene International Ltd 01-439 1856
Scotch House, 169-173 Regent Street, London W1R 7EB. 24 hour answerphone.
Telex 250851

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MIDDLE EAST

to £13,000 Tax Free

Norconsult, one of the world's leading telecommunication consultants require a Computer Software Engineer to join their team currently based in Riyadh. The company provides plans and technical/budgetary control for the 470,000 line Telephone Extension Project on behalf of the Saudi P.T.T. Based on a H.P.3000 system the computer department provides services for all aspects of the contract and is committed to the continued support and development of these services.

The successful candidate will have a degree, a knowledge of Fortran and mini-computers. Familiarity with data-base systems and computer graphics would be advantageous.

A one year renewable contract will be offered comprising an attractive tax-free salary, free bachelor accommodation, company car and home leave paid every 3 1/2 months.

Please send a full resume to IAN HETHERINGTON

NORCONSULT SERVICES LTD
Contact House
179 Fulham Palace Road
London W6. Tel: 01-385 7989

Systems Programmers

Wiggins Teape, a major international contractor in the paper industry, are seeking a Systems Programmer to help support batch and on-line systems running on an IBM 370/148.

An upgrade to a twin 4341 configuration planned mid 1980.

The successful applicant will have:

- Strong DOS/VS knowledge.
- Good Assembly experience with at least working knowledge of Cobol.
- Experience in on-line systems.

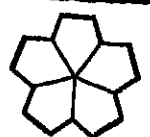
Working conditions are excellent in our new award-winning offices in Basingstoke. Among other benefits to be expected from a large Company we offer flexible working hours and a subsidised staff restaurant.

Relocation expenses will be paid as necessary.

Write or telephone for an application form to:

R.H. Gould,
Personnel Services Manager,
Wiggins Teape Ltd,
Gateway House,
Basing View, Basingstoke.
Tel: Basingstoke 20262 Ext. 3100.

Wiggins Teape Limited



SOUTH WEST UNIVERSITIES
REGIONAL COMPUTER CENTRE
University of Bath

ADVANCED NETWORKING

Three posts have been created to develop further the South West Universities Computer Network involving the adoption of international standard protocols for new mainframes, 32 switches, PSS and campus network gateways. In parallel with this project is due to commence in close collaboration with VLE development modern networking protocols on the 2880. Opportunities will exist to work on mainframe or front-end network development in a high or low level language according to suitability.

The appointment will be for three years initially in the salary ranges £4766-£8273 and £7825-£8891. Previous networking experience would be desirable.

Application forms and further particulars may be obtained from the Personnel Officer, University of Bath, Bath, BA2 7AY, quoting ref. 80/3. Closing date will be 28 January 1980.

UNIVERSITY OF BATH, SCHOOL
Department of Computer Science
Assistant Lecturer on College Lectures
Candidates must have completed or have over to complete a PhD in Computer Science or a related field.
The post is full time and involves teaching and supervision of students.
Salary will be £7,777 - £10,000 (under review).
The University of Bath is an equal opportunities employer. The Department of Computer Science is an equal opportunities employer. The Department of Computer Science is an equal opportunities employer.
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Above average salaries to \$30,000.00 plus bonus at completion of assignment.

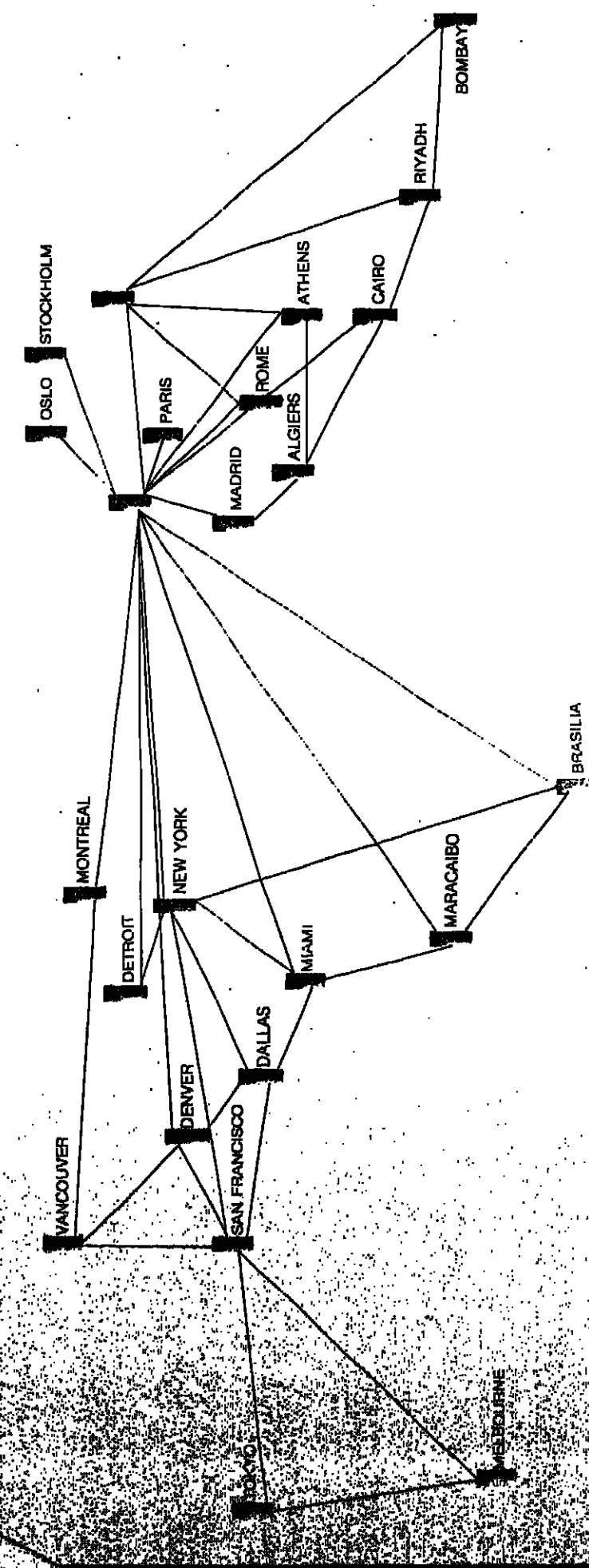
To arrange a confidential interview at our London office, send resume immediately or telephone Miss Angela Nanni at our office. (Reverse charges accepted).

Expense paid interviews in London during week of January 21, 1980

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IBM 370 OS COBOL. Good CICS and DLI essential. Commercial applications. N.W. location, 6-12 month contract. CE260

IBM 370 PLI PROGRAMMERS

Urgently required. Knowledge of Taskmaster and/or Adabas desirable. West Country location, 6 month contract. CE250

ANALYST PROGRAMMERS

IBM IMS DB/DC experience. Order Entry System. Midlands location, 6 month contract. Immediate start. CE260

PROGRAMMERS

IBM 370 OS IMS COBOL. "Copics" essential. Stock control. Midlands location. Immediate start. CE260

IBM 370 COBOL PROGRAMMERS

Some development involved. Midlands location, 12 month contract. Immediate start. CE250

ANALYST PROGRAMMERS

ICL 2960 VMEB COBOL IDMS essential. Various applications, 4 month contract. Immediate start. CE260

IBM PLI/COBOL PROGRAMMERS

DLI experience advantageous. Maintenance. Midlands location. Immediate start. CE250

ANALYST PROGRAMMERS

UNIVAC 9030 RPG II. Commercial applications, 6 month contract. Yorkshire location. Immediate start. CE250

PROGRAMMERS

IBM 370/148 DOS VS ASSEMBLER. CICS. Total Database desirable. Commercial applications. 6 month contract. N.W. location. CE260

PROGRAMMERS

ICL 2900 VMEB COBOL. Structured programming. N.W. location. 1 month + contract. Immediate start. CE250

PROGRAMMERS

ICL 1900/2900 COBOL. Knowledge of DME. ideal Commercial applications. Yorkshire location, 4 month contract. Immediate start. CE250

IBM COBOL PROGRAMMERS

Urgently required by our Midlands based client. Knowledge of CMS ideal 2 month + contract. CE250

7502 TPL

Terminal experience required by our Northern based client. Commercial applications, three month contract. Immediate start. CE250

PROGRAMMERS

UNIVAC 1100 COBOL and/or ASSEMBLER

Various applications. N.W. and Midlands locations. Long/short-term contracts. CE250

SENIOR ANALYST PROGRAMMER IMS DB and/or DC TOGETHER

With PLI essential. Order Processing. Midlands location, 6 month contract. Immediate start. CE250

HW 66 COBOL PROGRAMMERS

IDS/TDS experience desirable. Commercial applications. Midlands location. Immediate start. CE250

For further information on these and other contracts telephone:

021-843 8887
Kenington House, Suffolk Street
Queensway, Birmingham B1

061-833 9341
Adams House, Shambles Square
Manchester M3

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We could go on and list many more of the prime attributes of your next job but we feel that if you are already a Systems Programmer you will probably know that ICL can more than meet your requirements.

At Bracknell we are involved in the development of a wide range of projects that will probably surprise you in their diversity and novelty. We need to recruit more people to help us to continue with our work and will be holding two open evenings, as detailed below.

The experience we are looking for will certainly be well rewarded (the salaries for these vacancies can go as high as £12,000).

If you are already in system software or have good applications experience, you should certainly give us the opportunity of meeting you.

If you are an engineer with a bias towards micro-programming techniques, we would also like to talk to you. We look forward to seeing you!

Informal Interviews

LONDON
Tues. 15th January
Royal Garden Hotel,
High Street,
Kensington, London W.8
Anytime between 5.00pm-9.00pm

BRACKNELL
Wed. 16th January
ICL,
Lovell Road,
Bracknell, Berks.
Anytime between 5.00pm-9.00pm

If you can't make either of these dates, then please ring me, Rob Wilson, on Bracknell (0344) 24842, Ext. 2750 to arrange an alternative time. Or if you prefer, simply post the FREEPOST coupon.

FREEPOST - no postage necessary, just write to: Rob Wilson, ICL, FREEPOST (Ref: CLW 1573) Lovell Road, Bracknell, Berks RG12 1BR.
I would like to know more about Operating System and Software Development.

Name _____
Address _____
Tel Day _____
Tel Evening _____

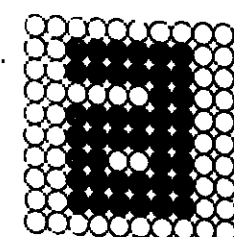
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Abacus warehouse
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London W1M 7LD

Programmer

(A.P.5 - £5,220-£5,547 - Comparability Award-Pending)

The authority have an I.C.L. 1901T (48k) with 2 x EDS 80 and 4 x 40 K.C./S. Magnetic Tapes: a V.D.U. is also in use.

Applicants should have had at least three years' COBOL experience. A knowledge of PLAN and DRIVER would be an added advantage.

The successful candidate will be required to assist in program maintenance, conversion and development.

Benefits include flexible working hours, payment of removal expenses, separation allowance and disturbance grant in appropriate cases, staff restaurant facilities.

Application forms and further information may be obtained from the Personnel Officer, Town Hall, Chester or Tel: (0246) 40144 Ext. 2138. Closing date: 18th January, 1980.



Council of the
CITY OF CHESTER

Programmer/Analyst

Uxbridge - Middlesex
Circa £6,500 - ICL COBOL

The company has recently implemented its first on-line stock control system. This is a pilot scheme designed to lead on to many other on-line applications. Consequently there is excellent development potential and the above position will be filled by a Programmer seeking a progressive future in a fast growing environment.



For application form, contact: Personnel Manager, Applied Chemicals Ltd., P.O. Box 43 Salisbury Road, Uxbridge, UB8 2SW, or telephone him on Uxbridge 37151.

SWITZERLAND

The Bank for International Settlements
an international institution in Basel
will have an opening as from 1st February 1980 for an

EXPERIENCED DOS/VS OPERATOR

for its VM/370-148 computer. The right person will have 2-3 years' experience as a DOS computer operator and a good working knowledge of English.

One year contract with possibility of extension. Please apply in writing, enclosing curriculum vitae, copies of testimonials and recent photograph to: the Personnel Section, Bank for International Settlements, Postfach 282, 4002 Basle, Switzerland.

OCC Contracts Personnel

Assignment Periods - 6 mths to 2 years

Holland

PDP 11 Programmer
BLISS experience essential
System Recovery S/W reqd
Mini or M/Frame Assembly reqd for
level of on-line and real time data
recovery and back-up facilities
IBM Programmer
MK4 & COBOL essen. CICS pref
UNIVAC 1100/series 80
Analysis & Programmers are reqd
for commercial & technical projects

Germany

COBOL Programmers
IBM pref. DB & German useful
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PL1 Analyst Programmers
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stock applications exp. ideal
Assembler Analyst Programmer
Some German reqd. for text editing,
processing systems development
Avionic A.T.E. Systems
Hardware/Software background reqd
BASIC/ATLAS exp. ideal

Italy

Software Development/Testing
Operating Systems & Communications
software for TCB00, COSMOS, PAC,
PAL ideal but not essential. Any
Comms exp. will be considered

Arizona - USA

Telephony Systems
Major devel project. Analyst
Programmers reqd. with good
telephony exp. e.g. Syst X, T/E4, etc

Paris

Univac 80/30 Programmer
COBOL essen. Duration 6 mths

Middle East

IBM Programmers
Major IBM installation with DB/DC
Exp. should incl. COBOL, PL1 & IMS

UK - South East

PL1/IMS Programmers
Start dates through to April
Honeywell L82 COBOL
Programmers
Simulation Systems
Devel. of Mini based R.T. Systems
Radar or similar exp. reqd
PDP 11 Dibal Programmers
Early availability preferred

Applications for other positions
are always welcome from candidates
interested in contract appointments.

For further details contact:
Roger Allington, quoting ref. PL18
OCC Contracts Personnel
1 Shootersway Park
Berkhamsted
Herts HP4 3NX
Berkhamsted 2289 (day/evening)

04427-2299

Slough College of Higher Education

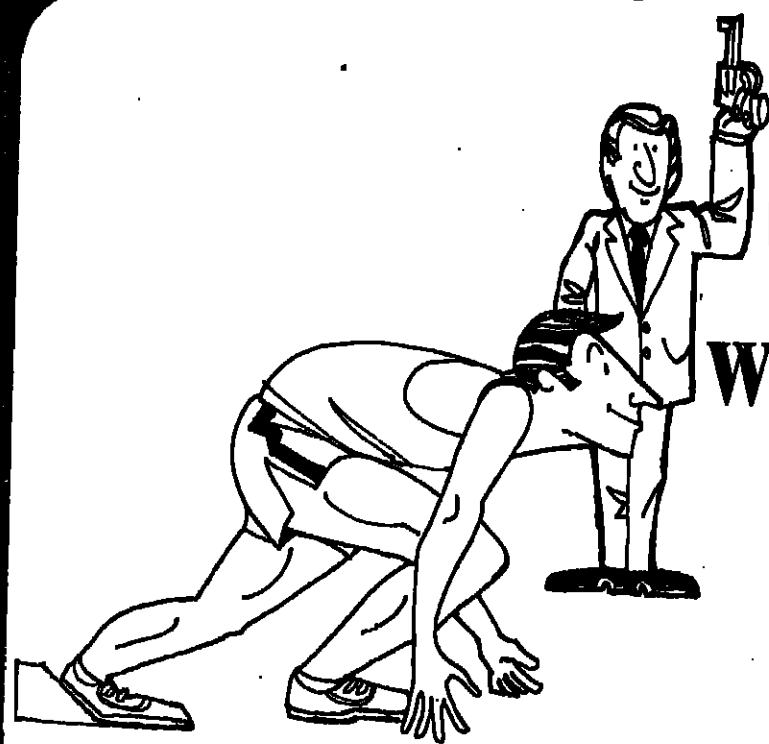
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full-time 2-shift working.

Please contact: Brenda Smith, Slough 34885

Ext. 28 - for further details, or write to:

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Wellington Street
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PROGRAMMERS

IBM 370 OS COBOL. Good CICS and DLI essential. Commercial applications. N.W. location, 6-12 month contract.

CE260

IBM 370 PLI PROGRAMMERS

Urgently required. Knowledge of Taskmaster and/or Adabas desirable. West Country location, 6 month contract.

CE250

ANALYST PROGRAMMERS

IBM IMS DB/DC experience. Order Entry System. Midlands location, 6 month contract. Immediate start.

CE260

PROGRAMMERS

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CE260

IBM 370 COBOL PROGRAMMERS

Some development involved. Midlands location, 12 month contract. Immediate start.

CE250

ANALYST PROGRAMMERS

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CE260

IBM PLI/COBOL

PROGRAMMERS

DLI experience advantageous. Maintenance. Midlands location. Immediate start.

CE250

ANALYST PROGRAMMERS

UNIVAC 9030 RPG II. Commercial applications, 6 month contract. Yorkshire location. Immediate start.

CE250

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Kensington House, Suffolk Street
Queensway, Birmingham B1

061-833 8341
Adamson House, Shambles Square
Manchester M3

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IBM 370/148 DOS VS ASSEMBLER. CICS, Total Database desirable. Commercial applications, 6 month contract. N.W. location.

CE250

PROGRAMMERS

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PROGRAMMERS

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CE250

7502 TPL

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- State of the Art • Career Development
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We could go on and list many more of the prime attributes of your next job but we feel that if you are already a Systems Programmer you will probably know that ICL can more than meet your requirements.

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The experience we are looking for will certainly be well rewarded (the salaries for these vacancies can go as high as £12,000).

If you are already in system software or have good applications experience, you should certainly give us the opportunity of meeting you.

If you are an engineer with a bias towards micro-programming techniques, we would also like to talk to you. We look forward to seeing you!

Informal Interviews

LONDON
Tues. 15th January
Royal Garden Hotel,
High Street,
Kensington, London W.8
Anytime between 5.00pm-9.00pm

BRACKNELL
Wed. 16th January
ICL,
Lovelace Road,
Bracknell, Berks.
Anytime between 5.00pm-9.00pm

If you can't make either of these dates, then please ring me, Rob Wilson, on Bracknell (0344) 24842, Ext. 2750 to arrange an alternative time. Or if you prefer, simply post the FREEPOST coupon.

FREEPOST — no postage necessary. Just write to: Rob Wilson, ICL, FREEPOST (Ref: CW 157) Lovelace Road, Bracknell, Berks RG12 1BR.

I would like to know more about Operating System and Software Development.

Name _____
Address _____
Tel: Day _____
Tel: Evening _____

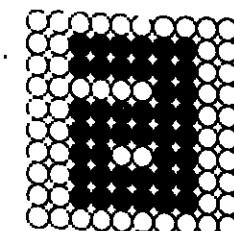
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The successful candidate will be required to assist in program maintenance, conversion and development.

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recovery and back-up facilities.
IBM Programmer
Mk.4 & COBOL essen. CICS pref
UNIVAC 1100/series 80
Analysts & Programmers are reqd
for commercial & technical projects

c£400

c£400

c£400

c£400

Germany

COBOL Programmers
IBM pref. DB & German useful
IBM Assembler Programmer
CICS experience preferred
PL1 Analyst Programmers
Assembler, PL1, German knowledge and
stock applications exp. ideal
Assembler Analyst Programmer
Some German reqd. for Text editing,
processing systems development
Avionic A.T.E. Systems
Hardware/Software background reqd.
BASIC/ATLAS exp. ideal.

c£390

c£380

c£450

c£380

c£400

Italy

Software Development/Testing
Operating Systems & Communications
software for TC800 COSMOS, PAC/
PAL ideal but not essential. Any
Comms exp. will be considered

Eng

Arizona — USA

Telephony Systems
Major devel. project. Analyst
Programmers reqd. with good
telephony exp. e.g. Syst. 7, TXE4, etc.

Eng

Paris

Univac 90/30 Programmer
COBOL essen. Duration 6 mths.

c£400

Middle East

IBM Programmers
Major IBM installation with DB/DC
Exp. should incl. COBOL, PL1 & IMS.

c£450

UK — South East

PL1/IMS Programmers
Start dates through to April.
Honeywell 182 COBOL
Programmers
Simulation Systems
Devel. of Min based R.T. Systems
Radar or similar exp. reqd.
PDP 11 Dihal Programmers
Early availability preferred

c£300

c£280

c£270

c£270

Applications for other positions
are always welcome from candidates
interested in contract appointments.

For further details contact:
Roger Allington, quoting ref. FL18
OCC Contracts Personnel
1 Shootersway Park
Berkhamsted
Herts HP4 3NX
Berkhamsted 2289 (day/evening)

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Salary on scale (under review) rising to a maximum of
£3,692 inclusive of area weighting (9% extra for
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Uxbridge — Middlesex
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for its VM/370-148 computer. The right person will
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One year contract with possibility of extension.
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copies of test results and recent photograph to the
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Postfach 252, 4002 Basle, Switzerland.

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That's quite a track record.

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Preference will be given to candidates with qualifications at an degree level but applications from candidates with other qualifications and suitable programming experience will be considered.

The appointment will commence as soon as possible. The salary will be on the scale £333 to £7521 (under review) plus 10% bonus.

Applications (one copy only), together with the names and addresses of three persons to whom reference may be made, should be sent to the Secretary, University of East Anglia, Norwich NR4 7TJ, from whom further particulars may be obtained as soon as possible before Wednesday, January 23rd, 1980. No forms of application are issued.

In naming three referees you are permitted to request to give only the names of those who can immediately be approached.

UNIVERSITY OF
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Applications, including curriculum vitae and details of two referees, should be forwarded to Dr. R. D. Dawling, School of Computing Studies and Accountancy, University of East Anglia, Norwich, NR4 7TJ, from whom further particulars may also be obtained as soon as possible and not later than 31st January 1980.

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to £10,500

Our clients, a major concern in the oil industry, require a geophysical analyst for their advanced computer installation.

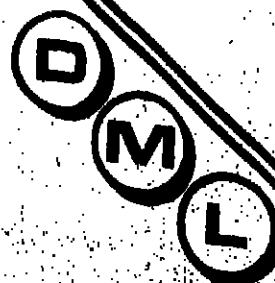
This is a senior post and candidates, as well as having a sound understanding of geophysics, should have the following abilities:

1. Seismic processing (though disciplines in systems, graphics and database will also be of interest).
2. FORTRAN and ASSEMBLER programming.
3. Realisation of the limits that present technology has when applied to practical geophysics.
4. Supervisory experience.

The successful applicant will be leading a specialised group and will have responsibility for maintenance, development, feasibility and communication of all matters relative to seismic systems software. The position is based in Scotland and the company offer relocation assistance as well as normal benefits and an excellent salary.

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LOCATION INTERVIEWS WILL BE HELD IN MAJOR CENTRES THROUGHOUT THE U.K.



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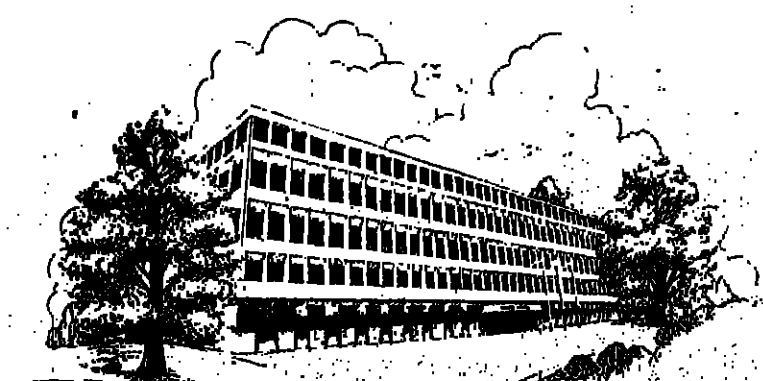
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LRU testing. Experience is required in preparing test requirements, writing test specifications in ATLAS or adapted ATLAS and the preparation and commissioning of test programs for complex digital equipment.

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Salary will be commensurate with experience and qualification. Due to the general salary level of engineering personnel in Germany, very attractive offers can be made. Benefits include, among others, 28 working days' vacation and 13 public holidays per year, assistance in finding living accommodation and reimbursement of relocation expenses for employee and family.

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Company benefits include 21 days holiday, sick pay + pension scheme, non contributory life assurance, car parking + purpose built restaurant on site.

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MICROPROCESSOR APPLICATIONS RESEARCH ASSISTANT

The successful candidate, who should have a degree or relevant professional qualification in Engineering or one of the Applied Sciences, will join an inter-departmental research team. He/she will be encouraged to register for a higher degree and will be expected to undertake some teaching. The appointment will be for 2 years.

SALARY SCALE LECTURER I £3480-£5952.
Further details and application form (to be returned by 25th January, 1980) from: The Personnel Officer, City of Birmingham Polytechnic, 1 Block, Perry Barr, Birmingham B42 2SU (021-356 6911, Ext. 217).

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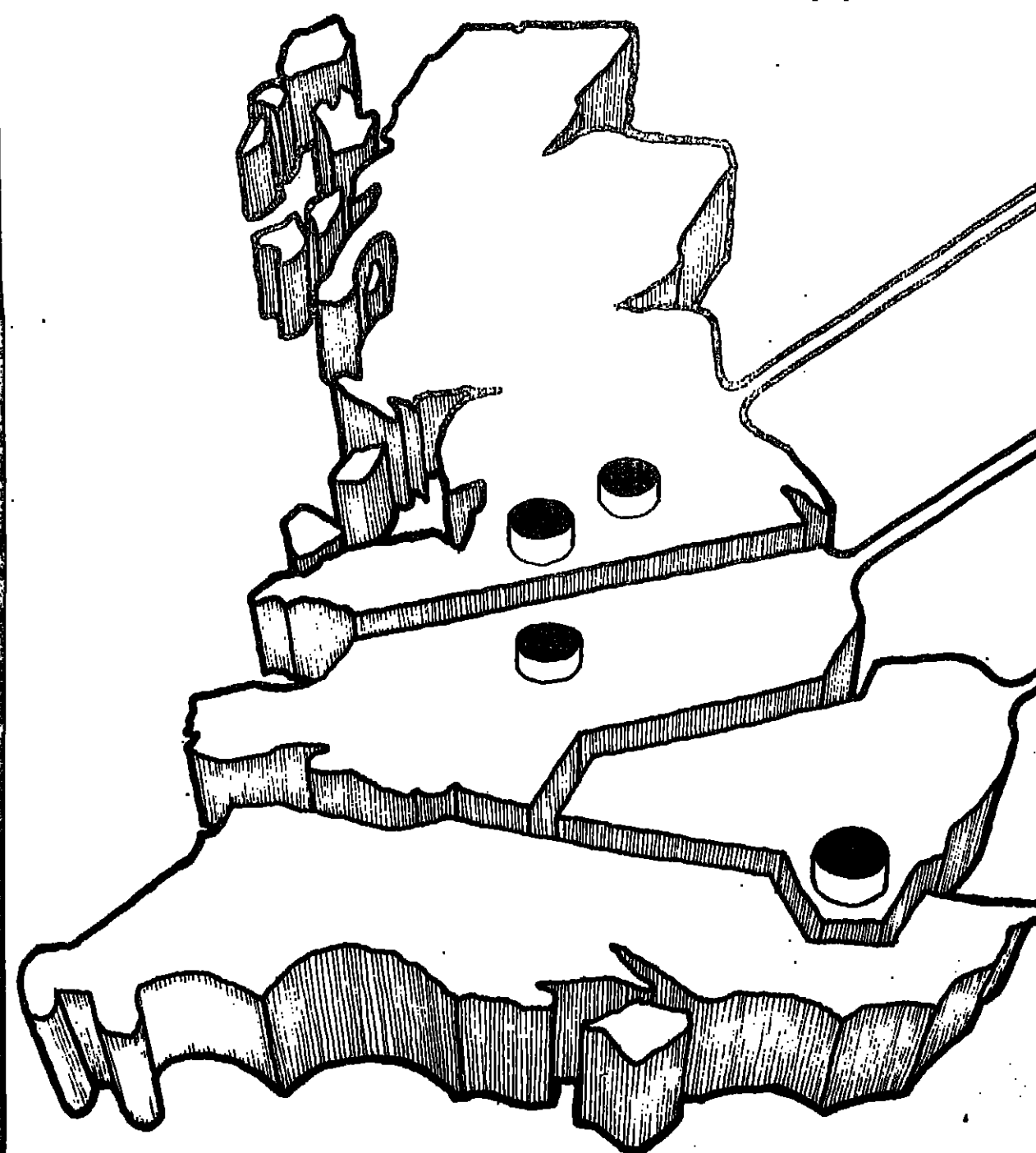
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01-836 8411

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The VLI group Ltd. 68-69, St. Martin's Lane,
London WC2N 4JS



Computer People International

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contracts

IBM

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370 OS IMS PL1 Programmers

370 OS/MVS ASSEMBLER Programmers —

Michael Jackson Structured prog. essential

Sys. 34 RPGII Systems Analysts

Sys. 34 RPGII Analysts/Programmers & Programmers

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contracts

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IBM 370 OS CICS COBOL Programmers

IBM 370 DOS CICS COBOL Analyst / Programmers

PDP11 RSX11M BASIC + 2 Programmers

PDP11 RSTS/E BASIC + 2 Programmers

H62 GCOS COBOL Programmers

H64 GCOS COBOL Programmers

U90/30 COBOL Senior Analysts

ICL 2960 VMEB Systems Support Analysts

NCR Century NEAT 3 Programmers

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Banking Analysts

Start a bright new future with us in this new year, we have many immediate contracts as well as others which will start over the next few months. If you are interested in any of these contracts, or in contract work generally, and have at least two years' experience, come in and see us: John Kelly and Barbara Wolsky, or call us on ...

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PL1 TASKMASTER Programmers

PL OS/VS JCL Programmers

PLI CICS Programmers

PL1 IMS DB/DC Programmers

COBOL CICS DL1 DMS Analyst Programmers

COBOL CICS DL1 Analyst Programmers

Systems 34 RPGII MAPICS Programmers

3790 Programmers

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Computer People

North
contracts

IBM

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IBM 3033 IMS Programmers
CICS Systems Designers
Database Designers
System 32 RPGII Programmers
CICS ASSEMBLER Applications Programmers
370 COBOL (TOTAL) Programmers
370 CICS Systems Designers
8100/DPPX COBOL Programmers
370 COBOL CICS DOS VS Applications Programmers
with structures programming experience
370 PL1 OS JCL Programmers
370 Production Analysts (Database)
370 FORTRAN Programmers

ICL

2960/70/80 COBOL IDMS Programmers

OTHER REQUIREMENTS

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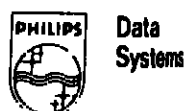
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CII-HB set to oust ICL at Space Agency

ICL LOOKS likely to lose out to CII-HB on contracts from the European Space Agency to replace two ICL System 4/72s. Software house Marcol of London is set to win a substantial consolation prize for the UK computer industry in the shape of a £250,000 conversion contract.

One System 4 is a general data processing machine at ESA's Space Research and Technology Centre in Noordwijk, Holland. The other is at Darmstadt, West Germany, where it acts as a back-end batch processing machine taking satellite data collected by Siemens 330 microcomputers and a CII 10 070, a machine based on the Xerox Sigma 7.

ICL bid large 2900s (above 2800) for the contracts, and told Computer Weekly that it had not been notified it had lost.

"However," said a spokesman, "we would not be too surprised to lose this one because ICL has over 70% of ESA's mainframe business and the Agency is likely to want to spread it more evenly between us, CII-HB and Siemens." Problems with the 2800 at Darmstadt, although now resolved, will not have helped ICL's case.

CII-HB would not comment.

on its bid, but it could be Level 66/DPS/00s, designed in the US, but built in Scotland and France. Marcol director John Harris agreed that ESA was in final negotiations on the conversion contract.

"We tendered for the contract without knowing the target machine," he told Computer Weekly.

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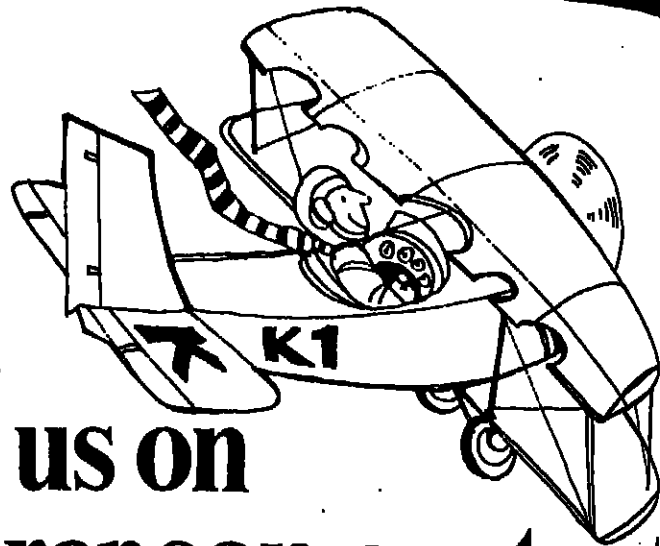
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- ★ Career path available into Sales Force if desired
- ★ Applicants must have Pre-Sales experience with Commercial application software
- ★ Other benefits include B.U.P.A., four weeks' holiday and business expenses

CONTACT: Bill Escott or David Green
on 01-965 9731 MAI U.K. Ltd.

Making Computers Effective DP Consultancy

Successful managers in DP recognise that the effective computer-based system is the one which is designed to work in the real world and does meet the end-user's needs.

Many DP professionals aim to develop their careers initially from a technical world into management. Consultancy offers a stepping stone to experienced DP professionals who wish to continue to develop their careers by giving them the opportunity to use computer systems from the viewpoint of top management and the user, and to build effective systems by working with the user to define his needs, imaginatively selecting all the appropriate methods and turning them into practicable systems solutions.

Added to this is the variety of environments - application, company, industry, country - with a consequent opportunity to explore and apply different DP techniques and hardware, software and communications facilities.

We are looking for a few people, in the preferred age group 28-35, to whom this prospect is attractive. If you are interested, please telephone Ernest Morris or Austin Bendall on 01-806 4040, or write giving brief but comprehensive details of career and salary to date quoting Ref. SW30/08 to the Executive Selection Division at the address below.

**Coopers & Lybrand Associates Limited,
Management Consultants,
Shelley House, Noble Street, London EC2V 2DQ.**

NORTH-WEST THAMES REGIONAL HEALTH AUTHORITY COMPUTER CENTRE DEPARTMENT MANAGER

FINANCE AND MANPOWER SYSTEMS
£8,170-£9,832
(FROM 1.1.80)

(CHIEF SYSTEMS DESIGNER SCALE 18)

North-West Thames Regional Health Authority is the strategic planning authority for Bedfordshire, Hertfordshire and the London boroughs of Barnet, Brent, Ealing, Hammersmith, Harrow, Hillingdon, Hounslow, Kensington and Chelsea and Westminster.

This Authority now wishes to appoint an experienced DP professional with proven managerial ability to lead the teams of analysts, programmers and liaison officers responsible for providing a complete computing service to the Finance, Personnel and Manpower Planning users in the Region. Continued development in these application areas is afforded a high priority.

This is a senior position which offers an excellent opportunity for an ambitious project leader to broaden his/her experience.

The Regional Computer Centre is a modern purpose-built self-contained unit standing in its own grounds in Colney Hatch Lane, New Southgate, London, N11. The Centre is equipped with a large ICL 1904S supported by document readers, Redifon key to disc systems and NCR microfilm processor. In addition a wide variety of mini computers are installed around the Region. There are good working conditions, a 36-hour week, 23 days' annual leave plus 2 furloughs.

For informal discussion of details of the post and computer development and activity in the Region, please telephone 01-361 0821.

Further details and application form may be obtained quoting Ref. No. 887 from the Regional Personnel Officer, North-West Thames Regional Health Authority, 40 Bankside, London, SE1 1JF. (Telephone No. 01-262 8011, Ext. 281).

Systems Analysts COBOL Programmers Operations Officers

Pioneering a new mini-computer system is no ordinary job

Up to £8405

Acton, West London

Gas is a big business and like any big successful business, North Thames Gas is dedicated to the development of ever-more advanced and efficient computer systems.

Our success depends on people - nearly two million customers in five counties including London. To improve our already unrivalled standard of service, we are developing a sophisticated and flexible real-time mini-computer system: this will run on Data General C330 machines connected to a large V.D.U. network. We have given this work high priority and we are now looking for capable and creative professionals with dedication and flair. They will be based at our mini-computer development centre at Acton, in West London, in addition to our existing large mainframe installation.

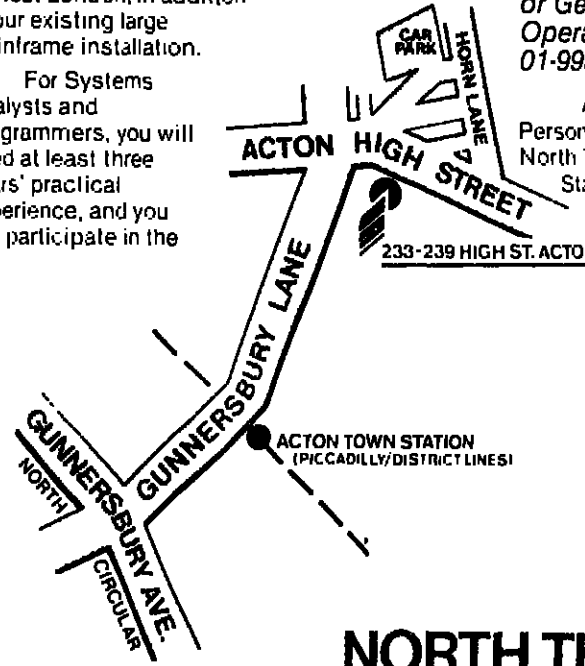
For Systems Analysts and Programmers, you will need at least three years' practical experience, and you will participate in the

development and implementation of the new systems. Initial salaries will range from £6,758 - £8,405 depending on experience.

For Operations Officers, you will need five years' experience, two of which should be at senior level. You will be responsible for the operating environment, provision of hardware/software support, the software library, production of computer operations procedures, problem solving and operator training. Initial salary will range from £7,316 to £8,405 depending on experience.

For an informal discussion ring Richard Toombs for Analysts and Programmers or Geoff Fenton for Operations Officers 01-993 0914

Alternatively, write to our Senior Personnel Officer (H.O.), North Thames Gas, North Thames House, 17-51 London Road, Staines, Middlesex TW18 4AE, quoting reference Q9054/CW



NORTH THAMES GAS

Challenging positions with excellent rewards in South Africa

Datsun South Africa is among the local market leaders in the motor industry. We are owned by the Messina group of companies and our large plant is located on the outskirts of Pretoria - South Africa's capital city famous for its tree lined streets, superb climate and historic buildings.

We manufacture passenger ranges as well as heavy and light commercial vehicles. In recent years the South African motor industry has been undergoing a heavy programme to increase local content i.e. components are manufactured in South Africa and not merely imported and assembled out of packing cases. As a result it is essential that we constantly upgrade our computer network to meet the challenges and demands of the future. To do this we require top line people to join us at a senior level to further develop our systems. Consequently you will develop your own expertise and knowledge.

Salary will mirror your position of responsibility and benefits will include subsidised car lease schemes, annual bonus, generous leave plus all other normal large company fringe benefits.

**Univac,
Data Base,
On-line,
plus
Cobol Experience?**

In addition, your buying power will increase substantially when based on the sterling equivalent. For example, some South African prices: 1lb rump steak 66p, dozen eggs 36p, 1lb sugar 6p, loaf of bread 14p, bottle of Scotch £3.38, bottle of Gin £2.82, bottle of Wine 75p, and the list goes on...

Assistance with relocation expenses will be given through South African Immigration in the form of air tickets for yourself and your family. Hotel accommodation for one month and a generous settling-in allowance will be paid by the company.

There are of course many questions which you will want to ask about Datsun and South Africa. We'll endeavour to answer these at your interview in as straight-forward a manner as possible.

In the first instance contact our Representative in London, Mrs. R. Cherry on 01-236 0526 or write to him in the strictest confidence at 50 Farringdon Street, London EC4A 4EA, enclosing full personal and career details. We'll contact you in approximately 3 to 4 weeks when we arrive in England.

Senior Analyst Analyst/Programmers

with emphasis on systems development and program design combined with a sound technical background.

We have a few select positions on both the design and the functional sides. However duties will revolve around the same axis.

You will be involved in the development of application systems, program specification, and design, system documentation and systems testing and implementation.

Experience of COBOL, On-line, Data Base and application systems combined with a thorough knowledge of system and program design are essential criteria. Experience of the Univac 1100 series will definitely be an added advantage.

Data Base Professionals

Your duties will involve system performance measurements, Data Base design, application appraisal as well as DBMS problem analysis.

To be successful in these tasks you will need to have extensive experience on the Univac 1100 series of computers combined with a sound knowledge of COBOL and Univac Assembler. In addition, thorough experience of DBMS 1100 software and dump analysis will also be necessary.

DATSUN

OPERATIONS STAFF

Senior Operator £5,500 neg

Required by large Midlands are. A minimum of two years in Operations, preferably on 370 mainframes, operating under OS/VS 1. The company offers well defined career paths for ambitious operators. Three shifts. Ref 2652.

Operator £5,200 neg

For prestigious West End site. Two or more years' experience on large IBM mainframes. Candidates should have OS/VS 1 or MVS experience. The position is suitable for a career-minded operator who wants to earn rapid promotion. Three shifts. Ref 3013.

Shift Leader £6,000 neg

For friendly West End installation. A minimum of four years' operations experience is required. Candidates should be familiar with DOS, POWER and GRASP operating systems. The position is suitable for candidates seeking an opening into management. Two shifts. Ref 2620.

Operator £5,300 neg

For large Northerns site. Candidates should have a minimum of eighteen months' operations experience on IBM equipment, using DOS/VS POWER CICS experience would be useful. Candidates will be required to do a programming aptitude test. Three shifts. Ref 2688.

Operator £4,500 p.a.

For friendly city site. Two or more years' operations experience, preferably on the 1900 range operating under George II. Three shifts. Ref. 2691.

Shift Leader £5,500

Urgently required by a South London company. A minimum of three years' operations experience, preferably on IBM equipment operating under DOS/POWER. CICS experience would be an advantage. A good opportunity for a young, ambitious operator seeking promotion. Three shifts. Ref. 2685.



CL EXECUTIVE
01-493 7761

RPG II PROGRAMMER

SYSTEM/34 — £6,000+

We are part of an international organisation rapidly expanding our U.K. cosmetics and pharmaceutical business.

We have recently replaced our S/3-8 by a large IBM system/34 and wish to recruit an RPG II Programmer. This is a new position in our expanding Data Processing Department, and the person appointed will work on major projects including on-line applications.

Applicants must have a minimum of 2 years' RPG II programming experience (knowledge of system/34 would be an advantage).

Please telephone or write for an application form to:

Mrs. J. Humby, Personnel Administrator
PLOUGH (U.K.) LTD.
Penarth Street, London SE15 1TR
Tel. 01-839 4363

or if you want to know more about the job, phone Mr. F. Gevork, Data Processing Manager.

An Advanced and Intensive Course on COMPILING TECHNIQUES

at BRUNEL UNIVERSITY, Uxbridge
on five consecutive Tuesdays, April 22-May 20, 1980
Lecturer: Prof. F. B. A. Hopwood, Head of Computing Division, Rutherford Laboratories
Author of "Computing Techniques"

Further details from:
The Secretary
Computer Science Department
Brunel University
Uxbridge, UB8 3PH

Computing in the Construction Industry

The advances of technology in the construction industry are placing increasing importance and demand on the use of computers.

The Computer Application Department of Taylor Woodrow Construction provides a computer service for engineers throughout the Taylor Woodrow Group. The demands on such a service are wide ranging covering the various engineering disciplines and embrace design planning and management information.

Applications are invited from graduates in computer science or from engineering graduates who possess a desire to develop their computer skills. Successful applicants will be involved in the maintenance of an efficient computer system, as well as the development of software associated with graphics and information processes.

Attractive salaries will be accompanied by the kind of conditions to be expected from a large international organisation. For more information and an application form please contact David Nelson (Ref. CAG), Personnel Department, Taylor Woodrow Construction Limited, 345 Ruislip Road, Southall, Middlesex UB1 2QX. Tel: 01-575 4884.

Construction

TAYLOR WOODROW

SYSTEMS ANALYST/PROGRAMMER

Construction Industry West Midlands

Expansion of the computer department within this successful Construction Group, with its Head Office situated in rural Warwickshire, has given rise to the requirement for a Systems Analyst/Programmer.

A totally integrated accounting system has been developed and is currently running on an IBM System/34. Computers are used in various management control systems in the next phase in the development plan, and the person envisaged will be of such a calibre as to be able to take complete control of individual projects.

At least five years' experience in systems analysis together with a detailed knowledge of RPG II is seen as a requirement, although consideration will be given to those with less experience.

A salary commensurate with the responsibilities to be undertaken is offered, together with a Company car. Other fringe benefits include a contributory pension scheme and free BUPA. Consideration will be given to relocation expenses if applicable.

Apply in the first instance, giving brief details of career to date, to:

P. Robbins, Esq., Personnel Manager
Espley Tyas Group Limited
Park Hall, Balford Pkrs
Evesham, Worcs. WR11 8SQ

ET ESLEY-TYAS

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To join a team in the control and checking of data processed on our computer. Applicants must be educated to 'O' level standard.

We can offer a starting salary of £292 with additional overtime payments, when required. A two-shift system is in operation. Monday to Friday, 08 00 hours to 23.00 hours.

The installation is in a modern building with excellent working conditions. A free car park and subsidised canteen facilities are available.

If you are interested, please telephone 01-735 4861 for an application form.



Installation Operations Manager
South East Thames Regional
Health Authority
Regional Computer Centre
Beckton Drive
LONDON SE11 4TE



SYSTEMS ANALYST/DESIGNER

(TWO-YEAR FIXED TERM APPOINTMENT) (Readvertisement) GRADE VIII

£6,606-£7,098 p.a. plus £10 per month "on account" pending result of comparability study

Applications are invited for the above post which is a joint appointment with the Peterlee and Aycliffe Development Corporations.

The successful applicant will be given a high level of responsibility in a central role reporting to the Managing Director. Duties include: advising on computer applications in all departments; specifying, maintaining and developing computer packages and in addition providing support to other departments in respect of computer technology.

Applicants should preferably be graduates in computer studies, with a high technology background and proven statistical ability. Ideally they should have experience of both small business computer systems and time sharing bureaux. The ability to program in Fortran IV and/or RPG II and/or people at all levels are essential requirements.

Attractive fringe benefits, payable in appropriate cases, may include: rented housing allowance; reasonable removal expenses; legal and estate agent's fees applicable to house sale and purchase; and a sitting-in allowance and an essential car user allowance.

The appointment is supernumerary and the successful applicant will be required to pass a medical examination. Previous applicants need not apply.

Application forms may be obtained from the undersigned or by telephoning Su Taylor on 281 281; should be returned not later than 25th January, 1980 to:

E C SIMPSON
Director of Administration and Finance
Lee House, Yoden Way, Peterlee, Co. Durham
Telephone: Peterlee (0783) 863366

HAMPSHIRE

EASTLEIGH COLLEGE OF FURTHER EDUCATION
Chestnut Avenue
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LECTURER

GRADE II IN COMPUTER STUDIES
to commence as soon as possible.

Required to teach Computer Studies, Computer Science and Data Processing to a range of full- and part-time courses preparing for BSC General and National Awards and GCE A Level and to act as manager of the College's Computer Centre.

Applicants should hold appropriate qualifications and/or experience in computing. This is an opportunity for a computer professional to enter full-time teaching in an expanding area of work.

Salary: £4470-£7148 p.a. + £72 per annum (subject to review)

Further particulars and application forms available from the Principal (Tel. 014444).

UNIVERSITY COLLEGE, LONDON
DEPARTMENT OF PHYSICS AND ASTRONOMY

COMPUTING ASSISTANT/JUNIOR PROGRAMMER

required to work in astronomical research group. We require a little programming knowledge and a lot of enthusiasm. The work will involve assisting in the computer reduction of astronomical data from balloon and satellite experiments. Experience will be gained with systems ranging from microcomputers to large mainframe machines. Minimum qualifications: A level Mathematics and some programming. Four weeks annual paid holiday plus statutory and customary holiday pay. Salary: £3,815-£4,181 including London allowance according to experience and qualifications.

Further particulars and application forms from the Personnel Officer (Technical Staff C/23), University College, London, Gower Street, London, WC1E 6BT.

BOX Nos.

Box number replies should be addressed to:

Box No.

c/o Computer Weekly
Dorset House
Stamford Street
London SE1 9LU

COMPUTER SERVICES MANAGER

Applications are invited for this new appointment with one of the biggest regional building societies. The Society, located in the West Country, has assets of £145 million and 27 Branch Offices handling over 120,000 accounts.

The appointee must be a DP professional with a proven record in leadership, planning, development and maintenance of batch and on-line systems. Our installation comprises an ICL 2900 mainframe with DDI terminals and a 7502 terminal system. Experience in a financial services sector using COBOL and TIPS software will be of considerable advantage.

In return the Society offers a remuneration package which includes a salary commensurate with experience and qualifications, concessional mortgage facilities, BUPA membership and a contributory pension scheme.

If you consider you fulfil the requirements, handle this important job successfully, place your name in strict confidence for an application form, stating brief details of qualifications, career to date and present salary to:

Director and General Manager, Bridgwater Building Society, Bridgwater House, King Square, Bridgwater, Somerset. TA6 30H.



Systems Programmer

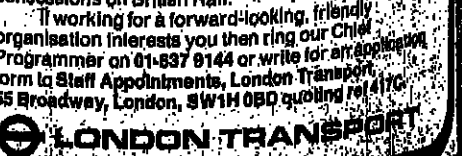
Nr. Oxford Circus Salary £6,475 — £7,090

Our Data Processing department needs a Systems Programmer to work in the Support Group. You will be primarily responsible for supporting the database software (DL/I) used by London Transport. This will entail working closely with Systems Development teams — formulating standards, advising on database matters etc — as well as ensuring that the usual support services are provided.

Computing power is used extensively by London Transport and many new database projects are currently in the stages of planning or development. The present environment for the database software is a 3081 processor running OS/VS1 and CICS/VS and 3081 processor running OS/VS1 and CICS/VS. In addition we have a large ICL installation and several mini-computers including IBM series/1 and System/8.

Among other benefits we offer good career prospects with opportunities to gain experience in a wide range of hardware and software, plus travel on London Transport services and valuable concessions on British Rail.

If working for a forward-looking, friendly organisation interests you then ring our Chief Programmer on 01-837 6144 or write for an application form to Staff Appointments, London Transport, 65 Broadway, London, SW1H 0BQ quoting ref. 4110.



MICROSYSTEMS'80

January 30 & 31, February 1, 1980 — Wembley Conference Centre, London

There are four great reasons why you should attend Britain's foremost microcomputer event. Can you afford to ignore them?

- Exhibition — more than 100 exhibition stands making it unquestionably Britain's largest specialist micro show.
- Professional Development Courses — three one-day courses to introduce you to the micro. Presented by Integrated Computer Systems, the leading training company.
- Buyers Forum — Sessions specially designed to help you in the selection of microprocessor products and equipment.
- Conference Sessions — State-of-the-Art sessions to bring you up-to-date with latest developments in the micro field.

WEDNESDAY, 30 JANUARY

Chairman: Dr. Frank Taylor, Systems Technology Consultants

DEVELOPMENTS IN MICROTECHNOLOGY

Microcomputing into the 80's.

Dr. Martin Healey, University College, Cardiff.

A review of the microelectronics field with particular reference to the direction the market will take in the 80's.

The developing chip.

Scott Dixon, Intel Corporation.

The trend towards incorporating more elements, including memory, on the chip continues.

Bi-slice technology — An approach to bespoke microprocessors.

Dr. Alan Clements, Teesside Polytechnic.

The flexibility of bi-slice components enables machines with a variety of architecture to be constructed.

Memories for microsystems.

David Parratt, Texas Instruments.

The capacity of semiconductor memory is expanding to meet the future need and new applications are being opened up by bubble memory.

PUTTING MICROS TO WORK

Vibration Monitoring.

Ian Whitworth, Royal Military College of Science.

Microprocessors are being used to monitor vibration fatigue on large metal structures.

Micros in toys.

Richard Phipps, Texas Instruments.

Growing use of microprocessors in toys poses interesting problems in systems design and cost control.

The application of microprocessors in measurement systems.

Speaker from SIRA Institute to be confirmed.

Incorporating micros in OEM products.

S. Sambell, Hugh Pughman Associates.

The technical and practical considerations of incorporating micros in OEM products are examined.

THURSDAY, 31 JANUARY

Chairman: Dr. Martin Healey, University College, Cardiff.

SYSTEMS DESIGN AND SPECIFICATION

Specifying the system.

Dr. Keith Baker, Sussex University.

A methodical approach to systems specification and design is the key to avoiding later problems.

Communicating with the outside world.

A.A. Molnar, Data Translation Inc.

Interfacing the microsystem to the outside world is not always as straightforward as it could be.

Five years' experience of a modular system.

Harroger Lindmark, Sateco AB.

Description of a microcomputer system based on over 80 Eurocard modules, allowing a choice of processor, store type and I/O circuits.

Standards for microsystems.

Speaker to be confirmed.

What technical standards have been agreed in the micro field? The speaker reviews what has been achieved.

SOFTWARE FOR MICROSYSTEMS.

Micro software.

John Smart, CAP Microsoft.

Microcomputer software is often limited in its scope. But it is improving. The current situation is examined.

Development aids.

K. Smith, Electrical Research Association.

The aids which are available for developing microsystems are reviewed and the way in which they are used is examined.

Development software for microprocessor systems.

Martin Whitbread, Leeds Polytechnic.

The main pre-requisites for development software outlined and the relative merits of PLM and PASCAL are assessed.

Databases on microsystems.

Tony Stock, D.M. England and Partners.

Problems of implementing database applications on microcomputer systems are identified and solutions are described.

FRIDAY, 1 FEBRUARY

Chairman: Julian Allanson, ACT Petsoff.

PERSONAL COMPUTING

Trends in personal computing.

Robin Brandner, North London Polytechnic.

An examination of the directions which personal computing is taking, with reference to the U.S. scene.

How to choose a microcomputer system.

Marin Collins, Applied Systems Techniques.

Identifying the criteria for selecting a microcomputer is the first step to a successful choice.

Where next with the Pet?

Richard Pawson.

What is likely to be the next stage in the development of the Pet and what does the future hold for many thousands of UK users?

How to run a business on a microsystem.

Speaker to be confirmed.

The speaker's experience in applying a micro to his business is described.

Linking your micro to the videodata system.

Peter Sommer.

The ability to provide local intelligence, in the form of a micro, adds a new dimension to videodata systems.

Microelectronics in schools — are we going in the wrong direction?

John Severn — Nottingham Technology Centre.

The speaker argues that we are in danger of regarding micros just as an educational aid rather than tools to be used.

Personal computing — a user's view.

Barry Biddle.

Getting into personal computers is not without its problems. The speaker looks at the current situation and asks whether things are improving.

Personal computing — a retailer's view.

Derek Moon, Currys.

When a major High Street chain goes into the personal computer business it's news. A director of Currys gives his view of the market.

A COMPUTER WEEKLY HANDBOOK

BASIC FILE DESIGN

BY OWEN HANSON

This book provides a brief but authoritative review of the most frequently used file organisation techniques, and of related subjects such as data security and software aids.

The file designer is shown how to choose between the available techniques on the basis of known or forecast information rather than rule-of-thumb, and methods of ensuring that the correct choice has been made are given.

New work carried out by the systems analysis division of the City University Business School, London, is linked with previously published information to provide methods of optimising the performance of sequential, direct and indexed files. Marked improvements can be achieved, particularly with direct files, which are worthy of wider use than at present.

Students of data processing, lecturers and practitioners should all find the book invaluable, particularly because it provides a great deal of information and many illustrations in a very compact format.

£1.50 including postage. Rates for bulk orders on request

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As one of the major companies in our field with a well-established professional reputation, we have both the resources and expertise to train you in the skills needed to carry out this challenging and rewarding work.

You must have a background in the computer industry, such as programming, analysis or any sales oriented position. Without this essential grounding you could not be expected to give current advice to applicants or advise clients in major recruitment assignments. Under 35, you should possess the potential to succeed in highly sales-oriented situations in which you will have the freedom to work very much on your own initiative.

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SOUTH YORKSHIRE COUNTY COUNCIL
DEPARTMENT OF ENGINEERING

Analyst/Programmers

Two vacancies exist in the Computer Section of the Department based in County Hall, Barnsley. The posts are part of a small group covering many aspects of civil and traffic engineering. Known future projects include Urban Design and Graphics. This Department uses the County's ICL 2904S, a PDP 11/34 based graphics workstation, WANG microcomputers and access bureaux using an intelligent terminal.

An attractive flexible working hours scheme is in operation and a pay comparability study is currently being undertaken with payment due from 1st January 1980.

Engineering Analyst/
ProgrammerGrade AP1, 5
Salary £4644-£5547

Post E2113

Applicants should possess a degree level qualification in a technical subject. Relevant experience would include FORTRAN and the use of technical packages. Knowledge of a non-technical language is desirable.

Trainee Engineering
Analyst/ProgrammerGrade T1-3
(Career Grade)
Salary £1809-£5067

Post E2116

Applicants should have at least 4 'O' level or equivalent together with A level Mathematics and an interest in working in a technical environment. Progression through the grade will be based on experience and examination success.

Closing date for applications 25th January, 1980

Please write or telephone for an application form quoting the appropriate post reference to the Chief Executive (Personnel) SYCC, County Hall, Barnsley S70 2TN or telephone Barnsley 86141 Ext. 266

Programmer
C. £5,500

We are a leading firm processing company based in North-West London. We require an experienced Programmer to be responsible for our small and friendly Programming Team, developing various applications on Honeywell Level 6 and Series 200 systems. Knowledge of COBOL and on-line processing would be advantageous.

For further information phone or write to:

Mr. Lloyd Williams,
Tudor Photographic Group Ltd.,
30-32 Oxgate Lane,
LONDON NW2 7HU.
Tel: 01-450 8384

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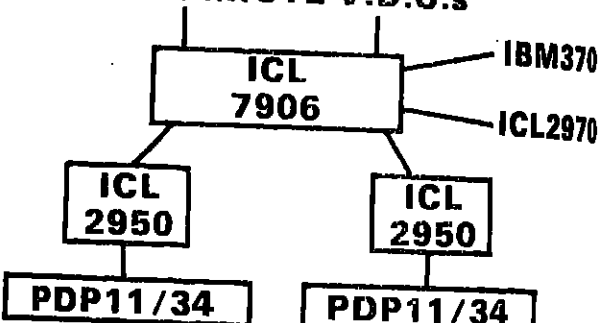
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IBM OS/Cobol.Telephone Roger Barnes on
01-628 4200

SIDA

southern electricity

ANALYST
UP TO £8,955
PROGRAMMER
UP TO £6,830(SALARY REVIEW 1st FEBRUARY)
(BASED NEAR MAIDENHEAD)

30 REMOTE V.D.U.s



S.E.B. are working on twin 2950 main frames linked to other ICL and IBM installations and are using teleprocessing, graphics and other interesting techniques. Our principal programming languages are COBOL and FORTRAN.

If you are interested in working on new real time projects on up to date equipment, and have system design or programming experience, contact Mike Shore or Graham Thorpe on Littlewick Green 21666 write for an application form to Mrs. Pam Polek 2 Southern Electricity House, Littlewick Green, Maidenhead, Berks. SL6 3QB, quoting 1/80 which should be returned not later than 29th January, 1980.

Programmer

Up to £5,500

Berks

Johnson & Johnson, leading international manufacturers of health-care and baby products, operate a highly efficient DP department at their Slough headquarters which is of vital importance to the company's continuing pattern of growth. The present installation is an IBM 370/138 with VDU's and 3740 transmission equipment at local and remote locations. The major programming language is PL/I with DLI as the database software. A.P.L. and D.M.S. are currently being implemented.

We have a vacancy for a Programmer with a minimum of one year's programming

experience, preferably PL/I - although training will be given where necessary. As a major international company, Johnson & Johnson can offer excellent career prospects. Salary is negotiable up to £5,500 p.a. depending upon qualifications and experience and there are a wide range of benefits including the advantages of flexitime. Relocation expenses will be paid where appropriate. Write with full details or telephone for an application form to: Mrs. Anne Dunn, Personnel Officer, Johnson & Johnson Limited, 260 Bath Road, Slough, Berks, SL1 4EA. Tel: Slough 31234.

Johnson & Johnson

BOX Nos.

Box number replies should be addressed to:

Box No.

c/o Computer
Weekly
Dorset House
Stanford Street
London SE1 8LU

THE POLYTECHNIC, HUDDERSFIELD
Department of Computer Studies and Mathematics
SENIOR LECTURER
OR LECTURER II COMPUTING

Applicants should have appropriate practical experience in (a) Application and Systems Programming

(b) Computing for Engineering and Technology including computer aided design and graphics

Candidates will normally be expected to hold a good honours degree and/or MSc.

Staff are expected to undertake academic, including research, to teaching duties.

Salary: SL £2879-£7701 (Bar) - £2293
LI £2470-£7149 per annum.

Further details and application forms, which should be returned by 15th January, 1980, to the Personnel Officer, The Polytechnic, Queensgate, Huddersfield, HD1 3QA. (Tel: 0484 22223). Please quote the relevant reference number.

CONTRACT

ICL System 1500 Consultant
ICL IDMS ANALYST-LONDON
-KENT

2900 Programmers with TPL or IDMS or MTS or TPMS

-UK & ABROAD

(10) OS COBOL Programmers required

-H. COUNTIES/LONDON

DOS/VS, ASSEMBLER Programmer

-LONDON

DOS COBOL/DL/1 Programmer

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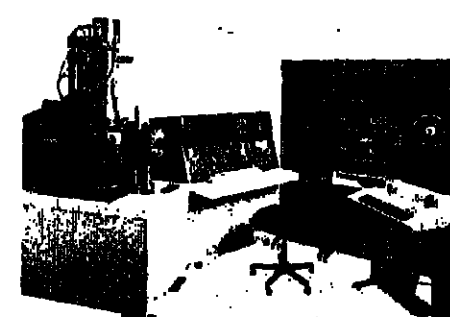
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THE SALES BIT

The delays that
give sales to
the competition

SALES inquiries are generally initiated by one of two situations - being a market leader or by virtue of specific marketing activity.

There are some companies whose market status is such that most end users considering a new purchase will generally include them, even if they have no intention of ultimately buying that supplier's product (which makes prospect qualification all the more essential). Rank Xerox in photocopiers, IBM in computers, ICI in chemicals, are typical examples. But even for large and successful companies such as these, self-generated inquiries represent only a small proportion of new business sales.

Most sales inquiries are generated by advertising exhibitions, Press announcements and other forms of product promotion. These are not only essential, expensive and time-consuming processes but are completely worthless if they do not result in winning new business which might not otherwise have been secured.

It is therefore remarkable that many sales organisations, having invested so much effort in creating these potential business opportunities, throw it all away by abusing the final product in their endeavours. This is usually the result of two factors: delay and mishandling. The effect of failing to respond quickly to sales inquiries should be obvious. If a potential buyer inquires today, he usually does so because he is interested in starting the buying process NOW - not next year, or even next week in many cases. Therefore, delay can only result in giving the initiative to the competition, or declining interest on the part of the potential customer - or even both!

There is only one way to deal with a sales inquiry - urgently. And there is only one person who can do the job - the salesman!

That must seem like an obvious statement, but the fact is that many companies are so indifferent to sales inquiries that they virtually organise their response in order to minimise the chances of sales success.

The most critical factor in handling sales inquiries, other than promptness, is prospect qualification. Any large scale promotional activity is sure to result in a significant proportion of invalid prospects in the context of selling opportunities. The sorting out of students from managing directors is a job for a salesman, not a secretary, an office manager or a marketing department.

There is no merit in sending out advertising material en masse, with perhaps a covering letter, to all inquiries in the hope that the truly valid prospect will identify themselves. Life is not like that!

A tremendous amount of time and money can be spent on typing, administration, postage, sales literature and so on, in order to present a professional and active image.

How much easier and effective it is if the salesman makes telephone contact with the inquirer and simply asks why the inquiry was made in the first place. Real live, immediate prospects can be handled right away, long-term 'suspects' can be attended to as a secondary priority, and the time-wasters can be dealt with in the appropriate manner.

There's nothing more frustrating than making a delayed response to a prospect only to find they have just placed an order elsewhere. 'I'm sorry, I thought you weren't interested!' What else can they say?

There is only one way to

Survey of turnkey
draughting systems

A SURVEY of interactive turnkey draughting systems related to their use in mechanical engineering has been carried out by the Computer Aided Design Centre, Cambridge. Copies of the report, 'Which Turnkey Draughting System?' can be had from the centre for £125.

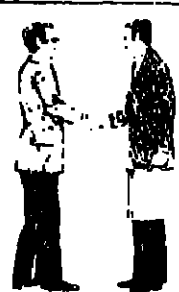
The survey was commissioned by the Department of Industry Mechanical Engineering and Machine Tool Requirements Board through its Computer Aided Engineering Panel. It was prompted by the growing interest in computer aided draughting and the fact that an increasing number of companies are seeking information and advice on the subject.

The draughting systems reviewed include the computer, graphics terminals, data storage, plotters and operating programs. They are sold and supported as a total package. The operating programs provide

Puzzle Answer

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56	81		
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- **Conference Sessions** — State-of-the-Art sessions to bring you up-to-date with latest developments in the micro field.

WEDNESDAY, 30 JANUARY

Chairman: Dr. Frank Taylor, Systems Technology Consultants

DEVELOPMENTS IN MICROTECHNOLOGY

Microcomputing in the 80s
Dr. Martin Healey, University College, Cardiff.
A review of the microelectronics field with particular reference to the direction the market will take in the 80s.
The developing chip
Scott Dixon, Intel Corporation.
The trend towards incorporating more elements, including memory, on the chip continues.

8086 technology — An approach to bespoke microprocessors.
Dr. Alan Clements, Tescotech Polytechnic.
The flexibility of 8086 microprocessors enables machines with a variety of architecture to be constructed.
Microprocessors for microsystems
David Parrott, Texas Instruments.
The capacity of semiconductor memory is expanding to meet the future needs and new applications are being opened up by bubble memory.

PUTTING MICROS TO WORK

Vibration Monitoring
Ian Whitworth, Royal Military College of Science.

Microprocessors are being used to monitor vibration fatigue on large metal structures.

Micros in toys
Richard Phelps, Texas Instruments.
Growing use of microprocessors in toys poses interesting problems in systems design and cost control.

The application of microprocessors in measurement systems.

Speakers from SIRA Institute to be confirmed.

Incorporating micros in OEM products
S. Sambell, Hugh Foxman Associates.
The technical and practical considerations of incorporating micros in OEM products are examined.

THURSDAY, 31 JANUARY

Chairman: Dr. Martin Healey, University College, Cardiff.

SYSTEMS DESIGN AND SPECIFICATION

Specifying the system.
Dr. Keith Baker, Sussex University.
A methodical approach to systems specification and design is the key to avoiding later problems.

Communicating with the outside world.
A.A. Molnar, Data Translation Inc.
Interfacing the microsystem to the outside world is not always as straightforward as it could be.

Five years' experience of a modular system.
Harrold Landman, Satco AB.
Description of a microcomputer system based on over 60 Eurocard modules, allowing a choice of processor, store type and I/O circuits.

Standards for microsystems
Speaker to be confirmed.
What technical standards have been agreed in the micro field? The speaker reviews what has been achieved.

SOFTWARE FOR MICROSYSTEMS

Micro software.
John Smart, CAP Microsoft.
Microcomputer software is often limited in its scope. But it is improving. The current situation is examined.

Development aids
K. Smith, Electrical Research Association.
The aids which are available for developing microsystems are reviewed and the way in which they are used is examined.

Development software for microprocessor systems.
Martin Whitbread, Leeds Polytechnic.
The main pre-requisites for development software outlined and the relative merits of PLM and PASCAL are assessed.

Databases on microsystems.
Tony Stuck, D.M. England and Partners.
Problems of implementing database applications on microcomputer systems are identified and solutions are described.

FRIDAY, 1 FEBRUARY

Chairman: Julian Allason, ACT Petsoft.

PERSONAL COMPUTING

Linking personal computing
Rodan Bradbeer, North London Polytechnic.
An examination of the disc-based which personal computing is reference to the UK scene.

How to choose a microcomputer system
Martin Collins, Applied Systems Techniques.
Identifying the criteria for selecting a microcomputer is a task, successful choice.

Where next with the PC?
Richard Paxon.
What is likely to be the next stage in the development of the PC? The future held for many thousands of UK users?

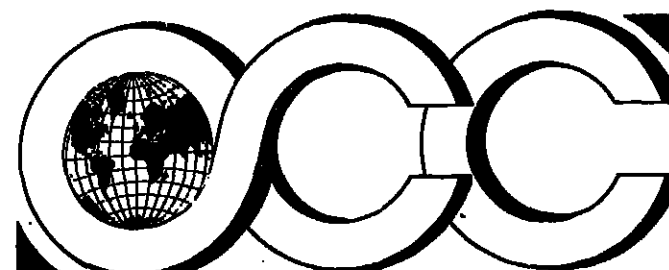
How to run a business on a microsystem
Speaker to be confirmed.
The speaker's experience in applying a micro to his business is outlined. Lending your micro to the microdata system.

The ability to provide local intelligence, in the form of a micro, dimension to microdata systems.

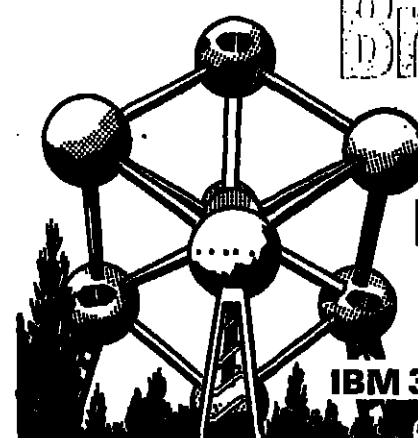
Micros from the schools — are we going in the wrong direction?
John Seaton, Nottingham Technology Centre.
The speaker argues that we are in danger of regarding micros as educational aid rather than tools to be used.

Personal computing — a user's view.
Harry Biddle.
Getting into personal computing, is not without its problems. By looking at the current situation and asking whether things are going to change.

Personal computing — a retailer's view.
Derek Moon, Curry.
When a major High Street chain goes into the personal computer, it's news. A director of Curry gives his view of the market.



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